

Technology Review

Edited at the Massachusetts Institute of Technology



January, 1966

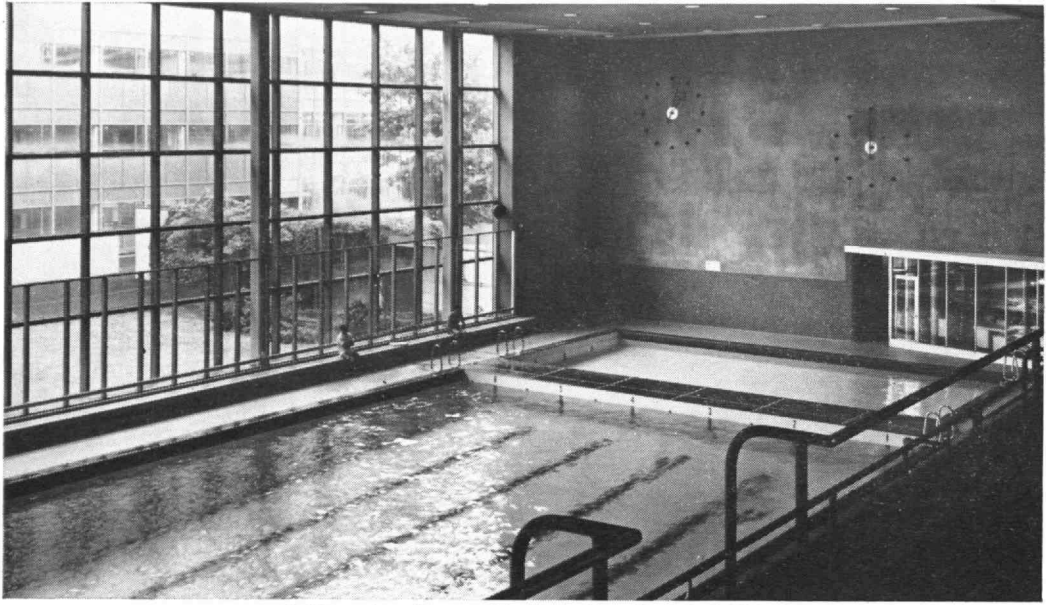
Megalopolitan Urbanity?

technology review

Published by MIT

This PDF is for your personal, non-commercial use only.
Distribution and use of this material are governed by copyright law.
For non-personal use, or to order multiple copies please email
permissions@technologyreview.com.

The 1939 M.I.T. swimming team enjoyed it!



M.I.T. swimming pool built by Aberthaw in 1939.

The 1999 swimming team will enjoy it, too!

Over 63 years of dependable service has characterized the Aberthaw Construction Co. These years of building have also built a reputation for performance and best final costs.

Aberthaw's reputation for past performance is your assurance. It is the primary reason that Aberthaw has been chosen by America's leading companies to build many of the finest structures across America.

Today Aberthaw is prepared to handle your project, anywhere in America, offering factual presentations, expert advice, reliable negotiations, responsible management, economical performance and the quality that made Aberthaw famous.

Write to us on your letterhead, and we will send you a complete list of our work, our clients and any specific information you may desire.



Technology Square — Two existing buildings of a series of structures to be completed for research and office facilities. Another example of Aberthaw's use of reinforced concrete.



Rust Craft Publishers, Inc., Dedham, Massachusetts — office portion of 350,000 square foot plant. Recipient of "Top Ten Plants of the Year" award by FACTORY magazine in 1955.



ABERTHAW CONSTRUCTION CO.

60 State Street, Boston, Massachusetts 02109 / 482-8830
Philadelphia, Pennsylvania / Washington, D.C. / San Francisco, California

AN/BQG-4 SONAR SYSTEM



Official United States Navy Photograph

ANOTHER EXAMPLE OF **MASSA** CAPABILITY

Sonar Receiving Sets are being used to increase the effectiveness of our subs against underwater enemy intruders. The sensitive hydrophones used in the PUFFS Systems were designed and manufactured by the Massa Division. Large quantities of hydrophones, employing Ammonium Di-hydrogen Phosphate (ADP) as the piezoelectric element with a uniformity of operating characteristics which exceed all others previously produced, have been manufactured by the Massa Division — another example of ability to provide high performance sonar devices in production quantities.

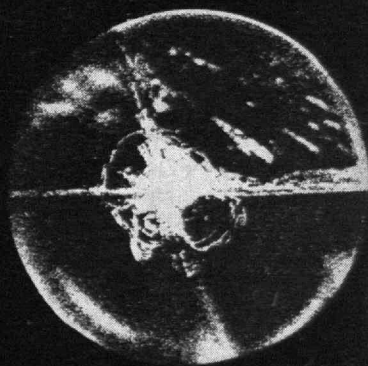
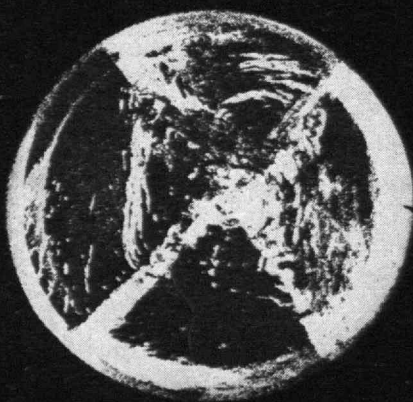
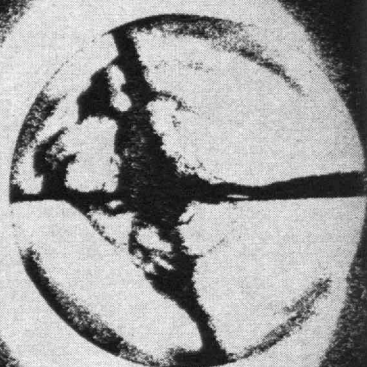
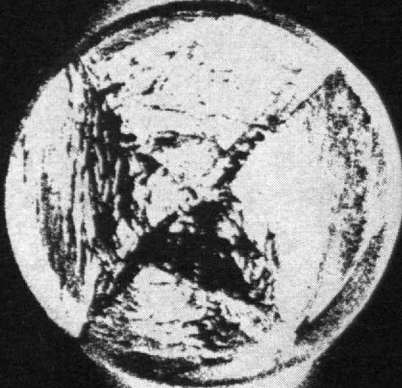
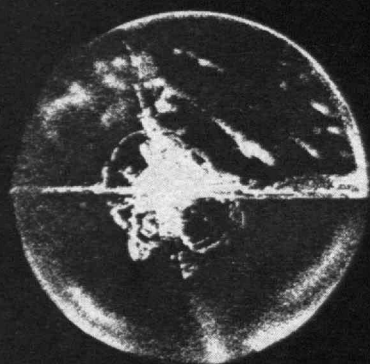
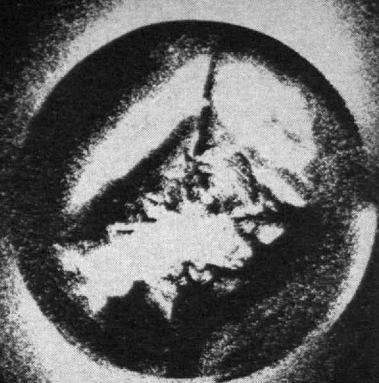
Other important Government Projects in which Massa is actively participating include: SUBROC, DASH, ARTEMIS, and ASROC. Over the past years Massa, in conjunction with the Department of Defense and leading industrial groups, has designed and produced hundreds of new types of transducers for use in underwater surveillance systems.

Write for Sonar Capabilities Brochure



Equal Opportunity Employer

MASSA DIVISION
DYNAMICS CORPORATION OF AMERICA
280 LINCOLN ST. HINGHAM, MASSACHUSETTS 02043



Lincoln Laboratory, an electronics research center of the Massachusetts Institute of Technology, conducts theoretical and experimental studies in selected areas, with responsibility for applications to problems of national defense and space exploration. The *Solid State* research and development program is concerned with quantum electronics, lasers, optical and infrared devices, solid state spectroscopy, semiconductor physics, computer components, and materials investigations. All qualified applicants will receive consideration for employment without regard to race, creed, color or national origin. Lincoln Laboratory, M.I.T., Box 28, Lexington, Massachusetts 02173.

Solid State Physics
Information Processing
Radio Physics and Astronomy
Radar
Computer Applications
Space Surveillance Techniques
Re-entry Physics
Space Communications
A description of the Laboratory's work will be sent upon request.

Technology Review

Reg. U.S. Patent Office

Published monthly from November to July inclusive, on the 27th day of the preceding month, and copyright © 1965 by the Alumni Association of the Massachusetts Institute of Technology.

VOLTA TORREY

Editor and Publisher

WILLIAM T. STRUBLE

Managing Editor

RICHARD F. WRIGHT

Advertising Manager

RUTH KING, *assistant to the editor*;
NANCY SARKISIAN, *assistant to the
advertising manager*; J. J. ROW-
LANDS, FRANCIS E. WYLIE, and JOHN
I. MATTILL, *editorial consultants*.

Alumni Association of M.I.T.

Samuel A. Groves, '34

President

D. P. Severance, '38

Executive Vice-president

Gregory Smith, '30

Vice-president

Philip H. Peters, '37

Vice-president

Frederick G. Lehmann, '51

Secretary

Inquiries regarding editorial con-
tents, requests to republish, subscrip-
tions, and advertising may be sent to

Technology Review
Room E19-430, M.I.T.
Cambridge, Mass. 02139

Telephone: Area Code 617, UNI-
versity 4-6900, Extension 4871.

An annual subscription to Technol-
ogy Review is \$4 in the U.S., \$4.50 in
Canada and elsewhere, and a single
copy, 60 cents. Three weeks must be
allowed to effect a change of address,
for which both the old and the new
address of the subscriber should be
given.

The office of publication is 10 Ferry
St., Concord, N.H., where *The Review*
is printed by The Rumford Press. Sec-
ond-class postage is paid at Concord,
N.H.



MEGALOPOLITAN

URBANITY? 15

Dean Emeritus John Ely Burchard, '23 (at left), of the M.I.T. School of Humanities and Social Science, discusses the question "whether megalopolis shall be metropolitan and urbane or whether it shall become a universal sands of Zushi." (Those sands are shown on *The Review's* cover.)

THE NEW M.I.T. ENVIRONMENT 22

The camera suggests how it has been changed by the new Julius Adams Stratton Student Center.

PROFESSIONAL EDUCATION

AND THE HUMANITIES 25

President Julius A. Stratton, '23, declares that such institu-
tions as M.I.T. and Carnegie Tech have "much to offer to
the scholar and the artist who will come to terms with science."

THE TWO ACADEMIES 31

Professor S. Young Tyree, Jr., '42, of the University of North
Carolina, discusses the differences between a college and a
university—and the need for both.

Individuals Noteworthy 4

The Trend of Affairs 28

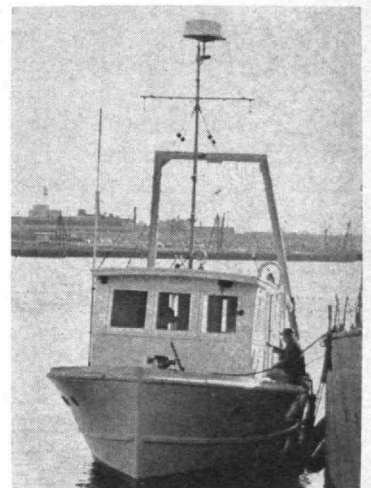
High Voltage Lab 29

Institute Yesteryears 40

Notable New Books 41

Feedback 46

THE COVER picture appeared last Au-
gust in *LIFE* Magazine soon after 500,000
people descended on Zushi Beach, 45
minutes from Tokyo, on a hot summer
day. For permission to publish it, *The
Review* is grateful to Mainichi Shimbun
and *LIFE* Magazine.



The R. R. Shrock goes to
work for M.I.T. (page 42).

I NDIVIDUALS NOTEWORTHY

Ford Professor

Arthur T. Ippen has become M.I.T.'s seventh Ford Professor. These professorships were endowed by the Ford Foundation as part of a program to advance interdisciplinary approaches to engineering, introduce new methods of teaching, and strengthen newly emerging domains of engineering.

Dr. Ippen, a member of the M.I.T. Faculty since 1945, founded and has directed the Department of Civil Engineering's Hydrodynamics Laboratory and is head of the Department's Water Resources Division. He is widely known as an expert on the hydrodynamics of coast lines and estuaries.

He was graduated from Technical University, Aachen, Germany, in 1931, received his doctorate at the California Institute of Technology in 1936, and taught at Lehigh University before coming to M.I.T. In addition to his many other activities, he is currently directing the M.I.T. exchange program with the Technical University of Berlin, and is a leading participant in the M.I.T. Inter-American Program in Civil Engineering.

"These activities are indicative of the increasing involvement of the School of Engineering in the international phases of engineering education and research," Dean Gordon S. Brown, '31, pointed out in announcing the appointment to a Ford professorship. "Dr. Ippen's extensive international experiences will make this expanding area of M.I.T.'s responsibilities increasingly effective. His ability to inspire his students with the excitement and challenge of teaching is illustrated by the fact that 80 per cent of his doctoral students have pursued careers in engineering education at leading universities throughout the world."

Dr. Ippen recently received the Prechtel Medal from the Technical University of Vienna on the occasion of its 150th anniversary, and last May he was made an honorary member of the Japan Society of Civil Engineering on the occasion of that society's 50th anniversary.

Naval Professor

Captain Robert E. Stark, USN, '48, has become professor of naval construction in the M.I.T. Department of Naval Architecture and Marine Engineering and professor and head of the Department of Naval Science. In these positions he succeeds Captain William M. Nicholson, '48, who has become director of the Ship Design Division in the Navy Bureau of Ships, Washington, D.C., and Captain Harry M. Pugh, who has retired.

Captain Stark was director of the Appraisal Division of the Bureau of Ships before coming to M.I.T. He has been concerned with development of aircraft carriers, nuclear-powered guided-missile frigates, guided-missile cruisers, and other types of ships.

A graduate of the U.S. Naval Academy, he served on the USS *Philadelphia* during World War II, and was later assigned to the New York Naval Shipyard, the David Taylor Model Basin, and as design superintendent at the Philadelphia Naval Shipyard. He is a member of the Society of Naval Architects and Marine Engineers, the American Society of Naval Engineers, and Sigma Xi.

Serving the U.S.

Provost Charles H. Townes is chairman of NASA's Science and Technology Advisory Committee for Manned Space Flight and its Lunar Surface Subcommittee, on which Professor T. William Lambe, '44, is serving.

Dean Jerome B. Wiesner and Thomas F. Malone, '46, were chairmen, respectively, of citizens' committees on arms control and disarmament, and on meteorology, for the White House Conference on International Cooperation. Professors Thomas K. Sherwood, '24, and Jule G. Charney also participated.

Aide to India

Professor Norman C. Dahl, '52, has been appointed to represent M.I.T. on the Steering Committee of the Kanpur Consortium. He succeeds Professor Louis D. Smullin, '39, who is now at Kanpur.

Nine American universities are participating in the consortium, formed to assist the Indian government in the development of the Institute of Technology at Kanpur along the lines on which American technological education is evolving.

(Continued on page 6)



YANNI POSNAKOFF, '58, exhibited paintings and assemblages of "Elements of War and Monuments for Peace" at the Galerie Internationale in New York last November. The photograph of him (shown above) was made by Marinos Costeletos, '58, for posters announcing this showing of his work.

wants two kinds of mechanical engineers:

1. burning with ambition to reach manager's status as soon as possible



- College grade-point average on the high side in technical subjects

Secretly admitted to self at certain point in undergraduate career that the scholar's way of life is for other people *but smart enough to have kept secret from the professors who are, after all, scholars.* Diploma in, secret out.

- Seeks prosperous, highly diversified employer

Competitive personality who wants to play on a strong, long-lasting team in the big leagues.

- Unafraid of choices and changes

With a mechanical engineering background, we might find him adept at keeping a troupe of welders happy on a new petrochemical project, or designing a new type of machine for the lithographic industry, or organizing a small laser-manufacturing department, or operating a large magnetic tape plant, or profitably piloting one of the world's major industrial corporations.

2. able to hold a manager's job in time but sure he wouldn't like it



- College grade-point average on the high side in technical subjects

Why not? The subjects were intrinsically interesting, and most of the professors proved to have a clear understanding of them.

- Seeks prosperous, highly diversified employer

To practice modern mechanical engineering—this is not 1936—one needs scope, contacts, and resources.

- Unafraid of choices and changes

With a mechanical engineering background, he might choose to take a high leap over the interdisciplinary wall into solid state physics, pull some excessively generalized equations out of a journal that others on the circulation list quickly glance at and pass along. Six months later he may have a new composition of matter on board a ship bucking the solar wind to Mars.

What is said here about mechanical engineers is equally applicable to chemical engineers and electrical engineers. Our expansion rate now demands technical people who, at the one extreme, are still fresh from the classroom with its benefits and, at the other, have had ten years of practice in their professions and are now ready to select a lifetime employer. We offer a choice of three communities: Rochester, N. Y., Kingsport, Tenn., and Longview, Tex. We earnestly solicit serious and honest self-descriptions addressed to:

EASTMAN KODAK COMPANY

Business and Technical Personnel Department/Rochester, N. Y. 14650

An equal-opportunity employer.

(Continued from page 4)

Honors to Alumni

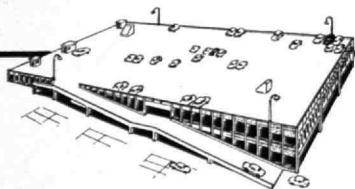
Recipients of recent awards and similar distinctions have included:

Allen Abrams, '15, the TAPPI medal by the Technical Association of the Pulp and Paper Industry . . . *Julius A. Stratton*, '23, an honorary Doctor of Humane Letters degree by the Jewish Theological Seminary of America . . . *R. B. Woodward*, '36, an honorary Doctor of Science degree by Brandeis University;

William H. Cook, '38, *Richards L. Loesch*, '39, and *John E. Steiner*, '41, the 1965 Elmer A. Sperry Award . . . *Allen J. Vander Weyden*, '44, the Distinguished Service Award by the Atomic Energy Commission . . . *Walter A. Backofen*, '46, *Donald H. Avery*, '59, and *Ira R. Turner*, '65, the Henry M. Howe Medal by American Society for Metals.

Sol Aisenberg, '57, an award for best original paper by the 1964 National Electronic Conference . . . *Bernhard U. Vainik*, '60, an honorable mention, 1965 Undergraduate Papers Contest, Northeast Electronics Research and Engineering Meeting . . . *Major Norman D. Heidelbaugh*, '63, the Scientist of the Year Award by the Air Force Association—Texas.

BUILT BY W. J. BARNEY CORP.



Parking Garage for Presbyterian Hospital
Edwards & Kelcey, Inc. Consulting Engineers

PRE-STRESSED and PRE-CAST Concrete Construction

This parking garage was constructed with concrete sections that were pre-stressed and pre-cast for the entire building frame and assembled on the job. Three levels, interconnected by ramps for easy loading, accommodate 428 automobiles.

Provision has been built into the structure so that floors may be added—is also designed for horizontal expansion.

W. J. BARNEY CORPORATION

Founded 1917

INDUSTRIAL CONSTRUCTION

101 Park Avenue, New York

Alfred T. Glassett, '20, President

Robert F. Lathlaen, '46, Vice President

Faculty Notes

Provost *Charles H. Townes* of M.I.T. received the Golden Omega Award at the Electrical Insulation Conference. . . . Dean Emeritus *George R. Harrison* has been elected a director of Bausch & Lomb. . . . Dean Emeritus *Pietro Belluschi* was one of the designers of the 52-story Bank of America World Headquarters building to be erected in San Francisco.

Dean *Jerome B. Wiesner* was the recipient of an honorary Doctor of Science degree by Brandeis University . . . Associate Professor *Phillips W. Robbins* has won the \$1,000 American Chemical Society Award in Biological Chemistry for his identification of the structure of the antigens in *Salmonella* bacteria.

Authors Honored

Semi-annual "authors' days" at the Tech Coop have been arranged to enable students and other readers to meet M.I.T. authors. W. Bradford Wiley, President of John Wiley & Sons, Inc., and officials of his firm were hosts at the first gathering.

Dr. Shapley Honored

Professor Harlow Shapley was 80 in November and was given a birthday dinner at the American Academy of Arts and Sciences by the Harvard College Observatory. Dr. Shapley is a former president of the Academy and is a life member, emeritus, of the M.I.T. Corporation. His home now is in Peterborough, N.H.

Famous for his proof that our solar system is at the outer fringe of the Milky Way, Dr. Shapley's birthday party brought together many of the world's most noted astronomers.

(Continued on page 11)

ENGINEERS/SCIENTISTS

ATOMIC PERSONNEL . . . A leading placement service to the engineering and scientific fields.

Our staff of experienced engineers is prepared to assist you in solving your career problems. The fees for our national service are paid by the employer.

Write for confidential application or...
send us your personnel requirements.

Arthur L. Krasnow '51, President

ATOMIC PERSONNEL, INC.

Suite 1504T, 1518 Walnut St., Phila., Pa. 19102



M. B. FOSTER ELECTRIC COMPANY

368 CONGRESS STREET
BOSTON, MASSACHUSETTS

ELECTRICAL CONTRACTORS

New Haven, Conn.

Portsmouth, N.H.



HOW LONG IS TWENTY YEARS?

Not long, for some companies; but for an organization specializing in modern electronic research and development, it is as old as the industry itself. Our first twenty-year man receives a pin like the one above this year.

Melpar has helped pioneer many of the technological breakthroughs of the past twenty years—what will the advances be in the next twenty years? We think we know what a few will be. We're working on them now. If you are a scientist or engineer interested and capable of working ahead of the pack, we want to talk to you now.

Wide diversification at Melpar in more than 110 major contracts offers many challenging assignments to qualified scientists and engineers.

We have immediate requirements for:

PHYSICISTS

for developmental work in the use of infra-red detectors and optics and their application for chemical analysis. Additional requirements in all phases of thin film microcircuitry.

ELECTRONIC ENGINEERS

to work in Pattern Recognition, Network Synthesis, Random Noise Theory, Speech Synthesis, Data Retrieval, Microwave Systems Receiver Design, Circuit Design, and Machine Intelligence.

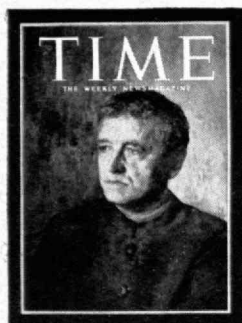


A SUBSIDIARY OF WESTINGHOUSE AIR BRAKE COMPANY

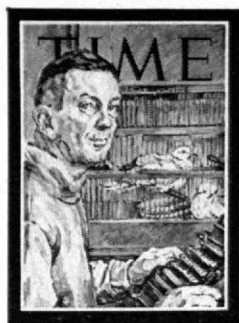
7709 Arlington Boulevard, Falls Church, Virginia

An equal opportunity employer

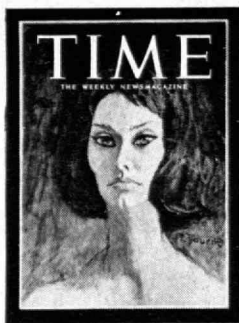
SPACE SCIENCES • SPECIAL PURPOSE DATA PROCESSING • ELECTRONIC WARFARE SYSTEMS • ORDNANCE DEVICES • SIMULATION AND TRAINING
SPECIAL DETECTION SYSTEMS, BIOLOGICAL AND CHEMICAL • COMMUNICATIONS • LIFE SCIENCES • MICROELECTRONICS • TEST AND EVALUATION



ART



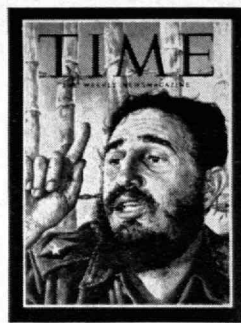
BOOKS



CINEMA



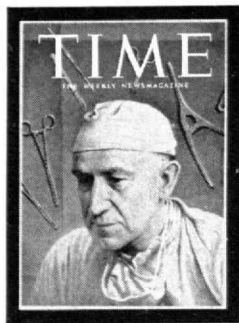
EDUCATION



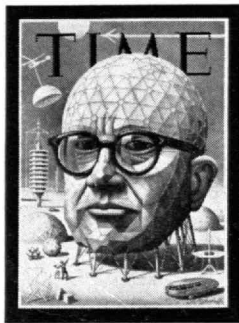
THE HEMISPHERE



THE LAW



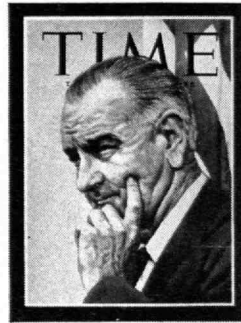
MEDICINE



MODERN LIVING



MUSIC



THE NATION



PRESS



RELIGION



SCIENCE



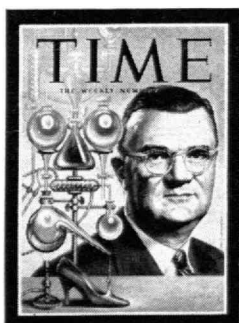
SHOW BUSINESS



SPORT



THEATER



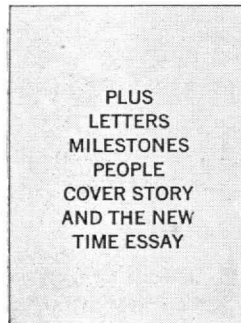
U.S. BUSINESS



THE WORLD



WORLD BUSINESS



PLUS
LETTERS
MILESTONES
PEOPLE
COVER STORY
AND THE NEW
TIME ESSAY

24 ways one magazine keeps you better informed

Every week of the year, 14 million alert American men and women follow the news in TIME—from Books to Business, from Medicine to Music, from Modern Living to The World. TIME's readers include leading educators, scientists, doctors, a good many of the nation's top businessmen and government officials—and their wives. They not only read TIME. They also vote it the most important magazine published in the U.S. today, as well as their own personal favorite. And it could very well be yours, too. Why not try it at a special money-saving introductory rate? Just fill in and mail the card attached (we pay the postage)—or send in this coupon.

Mail to: 6980
TIME
540 North Michigan Avenue, Chicago, Illinois 60611

Send me 27 issues of TIME and bill me at the special introductory rate of only \$2.97 (TIME for 11¢ a week).

NAME _____

(PLEASE PRINT)

ADDRESS _____

CITY _____ STATE _____ ZIP CODE _____

A SPECIAL INVITATION TO READERS
WHO WANT TO FOLLOW ALL THE NEWS



A1

SEND ME 27 ISSUES
OF TIME
AND BILL ME AT THE
SPECIAL
INTRODUCTORY RATE
OF ONLY \$2.97

(TIME for only 11¢ a week.)

name (please print) _____

address _____

city _____

state _____

zip code _____

This rate good only in U.S. and Canada. Rate for air-speeded TIME International (reaches readers all over the world at almost the same time as readers here in the U.S.): 40 weeks for \$8.00. To order, write to TIME, 540 North Michigan Avenue, Chicago, Illinois 60611.

6981

FIRST CLASS
Permit
No. 22
CHICAGO, ILL.

BUSINESS REPLY MAIL

No Postage Stamp Necessary if Mailed in the United States—Postage Will Be Paid By—

TIME

THE WEEKLY NEWSMAGAZINE
540 NORTH MICHIGAN AVENUE
CHICAGO, ILLINOIS 60611

A SPECIAL INVITATION TO READERS
WHO WANT TO FOLLOW ALL THE NEWS



A2

M. S. Sherrill: 1877-1965

An inspiring teacher and warm friend of M.I.T. students for 45 years, Professor Emeritus Miles Standish Sherrill, '99, died in November. He retired in 1944 but continued to teach until 1948 and in recent years had made his home at the residence of Professor Charles D. Coryell.

Dr. Sherrill was born in Louisville, Ky., and attended Phillips Andover Academy. After graduation from the Institute, he went to the University of Leipzig and the University of Breslau, where he received his Ph.D. degree in 1903.

He collaborated with Arthur A. Noyes, '86, in the development of an outstanding course in physical chemistry and on a book, *A Course of Study in Chemical Principles*, published in 1921 and revised in 1938. During World War I, he was a research chemist for the Ordnance Department of the Army, supervising a catalytic process for the manufacture of picric acid. He left M.I.T. on leave at various times to teach and do research at the University of California, California Institute of Technology, and Harvard University.

Professor Sherrill was a Fellow of the American Academy of Arts and Sciences and the American Association for the Advancement of Science, and a member of the American Chemical Society, the American Association of University Professors, Sigma Xi, Alpha Chi Sigma, and the M.I.T. Alumni Council.

He is survived by a brother, Everett A. Sherrill, and several nephews and nieces.

Filming Honors

"Gateway of India," a 16-mm sound film in color, made by Oscar H. Horovitz, '22, of Newton, Mass., was named one of the Five Best Films of 1965 in an international amateur film competition conducted by the Victorian Amateur Cine Society of Australia. Mr. Horovitz is a Fellow of the Amateur Cinema League, Institute of Amateur Cinematographers, Ltd., and the Photographic Society of America.

(Continued on page 12)

Keep up to Date Professionally with **AUTOMATIC CONTROL BOOKS FROM ADDISON-WESLEY**

All Available on 10-Day FREE Examination

THEORY OF AUTOMATIC CONTROL (0140)

By M. A. AIZERMAN, *Institute of Automatics and Telemechanics of the Academy of Sciences of the U.S.S.R.*

This book is concerned with the theory, not the technology, of control, being generally limited to the theory that is most important for practical applications, i.e., the design and building of controllers. Assumes familiarity with the Laplace and Fourier transforms.

519 pp, 261 illus. (1963) \$11.75

NUMERICAL METHODS AND COMPUTERS (3955)

By S. S. KUO, *University of New Hampshire*

The development is essentially concerned with achieving two objectives: providing the necessary fundamental knowledge of the computer-oriented numerical methods for basic problems in algebra and analysis; acquainting the individual with the digital computer. Provides a real insight into techniques and also guides the scientist and engineer to the solution of advanced problems.

368 pp, 115 illus. (1965) \$10.75

ORDINARY DIFFERENTIAL EQUATIONS (5850)

By L. S. PONTRYAGIN, *Moscow State University*

This text emphasizes the applications of differential equations to the theory of oscillations and the theory of automatic control. It offers a thorough grounding in the methods and techniques of differential equations and demonstrates their application by means of engineering problems.

298 pp, 70 illus. (1962) \$9.50

LINEAR DATA SMOOTHING AND PREDICTION IN THEORY AND PRACTICE (0610)

By R. B. BLACKMAN, *Bell Telephone Laboratories, Inc.*

This book is essentially concerned with methods of data-smoothing and prediction which have been considered for practical use—many of which have actually been put to practical use. The subject is approached from the transmission point of view.

210 pp, 72 illus. (1965) \$11.75

INTRODUCTION TO THE LOGICAL DESIGN OF SWITCHING SYSTEMS (7575)

By H. C. TORNG, *Cornell University*

The emphasis of the presentation is placed on delineating the reasoning and thinking necessary to design a switching system. New results in switching theory, such as the geometrical interpretation of the threshold switching function, systematic approaches in state reduction, and sequential circuit decomposition are presented.

286 pp, 173 illus. (1964) \$10.50

TIME-DOMAIN ANALYSIS AND DESIGN OF CONTROL SYSTEMS (1603)

By RICHARD C. DORF, *University of Santa Clara*

This book is designed to introduce the student of control theory to analysis and design in the time domain. Covers the formulation and solution of equations describing the performance of control systems. The analysis and design is accomplished in the time domain and is useful for digital computer calculation.

194 pp., 144 illus. (1965) \$8.95

Whether your need is for expanded knowledge of theory or immediate and practical solutions to everyday problems, there is an Addison-Wesley text that can help you.



**ADDISON-WESLEY
PUBLISHING COMPANY, INC.**

Dept. A-536

Reading, Massachusetts 01867

Please send for my inspection and approval, a copy of each book I have checked. (I understand that I can return the books in ten days if I decide not to keep them.)

- | | |
|---|----------|
| <input type="checkbox"/> Aizerman, THEORY OF AUTOMATIC CONTROL (0140) | \$11.75 |
| <input type="checkbox"/> Kuo, NUMERICAL METHODS AND COMPUTERS (3955) | 10.75 |
| <input type="checkbox"/> Pontryagin, ORDINARY DIFFERENTIAL EQUATIONS (5850) | *\$ 9.50 |
| <input type="checkbox"/> Blackman, LINEAR DATA SMOOTHING AND PREDICTION IN THEORY AND PRACTICE (0610) | 11.75 |
| <input type="checkbox"/> Torng, INTRODUCTION TO THE LOGICAL DESIGN OF SWITCHING SYSTEMS (7575) | \$10.50 |
| <input type="checkbox"/> Dorf, TIME-DOMAIN ANALYSIS AND DESIGN OF CONTROL SYSTEMS (1603) | 8.95 |

Name Title

Affiliation

Address

City State Zip Code

☐ Please extend College Professor's Discount

New Posts

Named in the news of promotions, elections, and appointments recently were:

Edward L. Bowles, '22, as President, Whitin Machine Works, and as a Director, Jarrell-Ash Company . . . *Archibald Williams, Jr.*, '23, as Vice-president—Industrial Engineering, Emhart Corporation . . . *Russell W. Talbot*, '27, as Assistant Vice-president—Marketing, System Traffic Department, Pennsylvania Railroad;

James B. Fisk, '31, as a Trustee, Alfred P. Sloan Foundation . . . *Roy C. Haeusler*, '32, as Chief Engineer—Automotive Safety, Chrysler Corporation . . . *Robert C. Gunness*, '34, as President, Standard Oil Company (Indiana);

Hal L. Bemis, '35, as General Chairman, 1966 Campaign, Philadelphia and Montgomery County, American Cancer Society . . . *Brockway McMillan*, '36, and *Seth*

H. Washburn, '44, respectively, as Executive Director, Military Research Division, and as Associate Executive Director, Switching Division, Bell Telephone Laboratories;

James D. McLean, '37, as General Manager, Shelby American, Inc. . . . *Robert S. Gordon*, '38, as Vice-president, Castle & Cooke, Inc., Honolulu . . . *Jack C. Williams*, '38, as Assistant Manager, Port Arthur Area, Texaco Inc.;

Brigadier General Leo A. Kiley, '39, as Commander, Air Force Missile Development Center, Holloman Air Force Base, New Mexico . . .

Harlow J. Reed, '39, as Executive Vice-president—Metals, Olin Mathieson Chemical Corporation . . . *Winfield H. James*, '40, Executive Vice-president, News Syndicate Company;

Thomas R. Carrington, '42, as Chairman, Hospital Planning Association, Berkshire County . . .

Edward F. Thode, '42, as Associate Director, Engineering Experiment Station, New Mexico State University . . . *Harold Thorkilsen*, '45, as President, American Safety Razor Company;

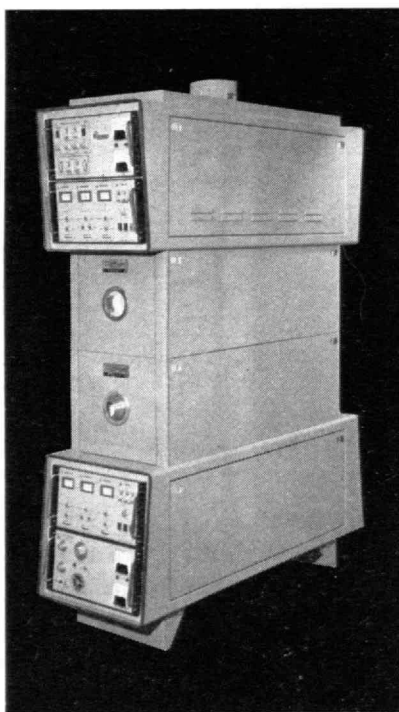
Stanley G. Timmerman, '45, as Vice-president—Engineering, Republic Foil, Inc. . . . *Edward J. Bacon*, '46, and *Jack C. Page*, '48, as Vice-presidents, Booz, Allen & Hamilton, Inc. . . . *James M. Ham*, '47, as Faculty Dean, Applied Science and Engineering, University of Toronto . . . *James H. Rial*, '47, as Vice-president—Manufacturing, American Envelope Company . . . *William C. Schneider*, '49, as Deputy Director, Mission Operations and Gemini Mission Director, National Aeronautics and Space Administration;

Charles W. Sherman, '49, as Vice-president and General Manager, Vasco Steel Group . . . *Charles L. Storrs, Jr.*, '49, as Director—Reactor Program, Combustion Engineering . . . *Ralph E. Beatty, Jr.*, '50, as Director, Warfare Models Division, Operations Evaluation Group, Center for Naval Analyses;

Forest C. Monkman, Jr., '51, as Director of Engineering, Black, Sivalls & Bryson, Inc. . . . *Raymond C. Sangster*, '51, as Director of Research, General Telephone and



J. HOWARD BECK '35	LOUIS GIORDANO '58
RAPHAEL BLIMAN '62	FORREST GOLDSMITH '35
ROY DEWHIRST '64	NATHAN PARIS '32
SIDNEY DRESSLER '51	MARTIN PHILLIPS '47



DIFFUZOR FURNACE SYSTEMS

with
Solid State Controls
and
Modular Design

TYPICAL APPLICATION:
Diffusion Furnaces
are used by Electronic
Component Manufactur-
ers for the High Tem-
perature Process-
ing of Semiconductor
Materials such as Sil-
icon and Germanium.

Engineers are invited
to investigate employ-
ment opportunities.

BTU ENGINEERING CORPORATION
BEAR HILL, WALTHAM, MASSACHUSETTS 02154 U.S.A.

PAUL E. DUTELLE, INC.



Roofers & Sheet Metal Craftsmen



153 PEARL STREET

NEWTON 58, MASSACHUSETTS

Electronics Laboratories, Inc. . . .
Ronald M. Pike, '53, as Professor
and Head, Chemistry Department,
Merrimack College;

Harry J. Watters, '53, as Division
Vice-president, Defense Engineering,
RCA Defense Engineering
Products . . . *John R. Hayes, '56*, as
Associate Professor of Psychology,
Carnegie Institute of Technology . . .
William E. Ohnesorge, '56, as Asso-
ciate Professor of Analytical Chem-
istry, Lehigh University;

Dr. Melvin J. Glimcher, '57, as
Chief, Orthopedic Service, Massa-
chusetts General Hospital . . . *Ed-
ward B. Roberts, '57*, as a Direc-
tor, Tyco Laboratories, Inc. . . .
Ronald A. Shulman, '57, as Vice-
president, Synectics, Inc.;

Major Elvin R. Heiberg, 3d, '58,
as Instructor, Department of Social
Sciences, U.S. Military Academy
. . . *Richard A. Drossler, '59*, as
President, CMCR, Inc. . . . *John
P. Leahy, '59*, as Chief Accountant,
Abrasive Division, Norton Com-
pany;

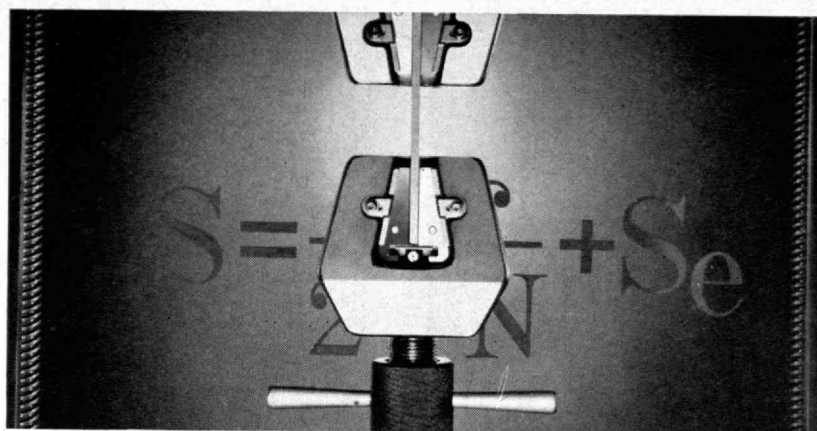
Douglas C. Sinclair, '60, as As-
sistant Professor of Optics, College
of Engineering and Applied Science,
University of Rochester.

The Quest & the Commitment

The Age of Space is also the Age of
Land and Sea. At Lockheed there are
no environmental limits to techno-
logical exploration and progress.
On land: highly advanced vehicle
systems for missions of the future.
In the sea: deep submersibles to
probe the ocean depths. In space:
Agena, most versatile vehicle
system of the age.

Engineers and scientists are invited
to write Mr. K. R. Kiddoo,
Professional Placement Manager,
Sunnyvale, California. An Equal
Opportunity Employer.

LOCKHEED
MISSILES & SPACE COMPANY
A GROUP DIVISION OF LOCKHEED AIRCRAFT CORPORATION



INSTRON

WHERE THEORY MEETS THE FACTS

Here is where the empiricist in
materials research takes over from the
theorist.

When the sample stretches and
breaks, and the story is written un-
equivocally on the recording chart of
the testing machine . . . this is the
moment when the theory checks out
. . . or it doesn't.

Every day, in laboratories across
the country, researchers are using the
versatile Instron Universal Testing
Instruments to obtain the facts, effort-
lessly, efficiently, accurately. Facts to
prove or disprove hypotheses, to test
new concepts or to re-examine
old ones.

And as the demands of our new
technology step up the pace of mate-
rials study and development, Instron
engineers are constantly working on
improvements and accesso-
ries to the broadly used basic
machine which will broaden
its ability to develop more
facts in more useful ways.
During the last year, for ex-

ample, we introduced such new de-
velopments as:

- A new, isothermal environmental testing system for running high-precision tensile and compression tests from -100°F to $+600^{\circ}\text{F}$.
- A new Instron Floor Model tester which will handle loads up to 20,000 lbs. in tension and compression.
- A series of new test grips, including pneumatically operated and high-temperature types.
- A complete incremental data logging system for the automatic, high-speed recording of test data on punched tape.

Broadly accepted in the field, the Instron Tester is known to virtually everyone engaged in materials research. You may not, however, know of the many testing aids now available.

If you wish information on these new developments, please write: Dept. B-10, INSTRON CORPORATION, 2500 Washington Street, Canton, Massachusetts.



2500 WASHINGTON STREET, CANTON, MASSACHUSETTS 02021

Now there are 40 M.I.T. PAPERBACKS

THE M.I.T. PRESS
Cambridge, Mass.
02142



THE UNIVERSE by *Otto Struve*;
recent remarkable discoveries in
astronomy, MIT-3, \$1.95 †

WORD AND OBJECT by *Willard
Van Orman Quine*; the notion of
meaning and the basis of
communication, MIT-4, \$2.45 †

LANGUAGE, THOUGHT, AND
REALITY: SELECTED WRITINGS OF
BENJAMIN LEE WHORF edited by
John B. Carroll, MIT-5, \$1.95 †

THE LEARNER'S RUSSIAN-ENGLISH
DICTIONARY by *B. A. Lapidus and
S. V. Shevtsova*, MIT-6, \$2.95 †

THE LEARNER'S ENGLISH-RUSSIAN
DICTIONARY by *S. Folomkina and
H. Weiser*, MIT-7, \$2.95 †

MEGALOPOLIS: THE URBANIZED
NORTHEASTERN SEABOARD OF THE
UNITED STATES by *Jean Gottmann*,
MIT-8, \$3.95 †

TIME SERIES by *Norbert Wiener*.
MIT-9, \$1.95. (Available in
hardcover as *Extrapolation*,
Interpolation, and *Smoothing of
Stationary Time Series with
Engineering Applications*, \$4.50) †

LECTURES ON ORDINARY
DIFFERENTIAL EQUATIONS
by *Witold Hurewicz*, MIT-10, \$1.95 †

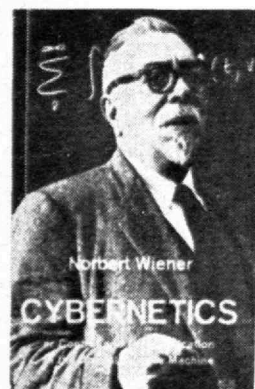
THE IMAGE OF THE CITY
by *Kevin Lynch*; toward city form
more vivid and memorable to the
dwellers therein, MIT-11, \$2.95 †

THE SINO-SOVIET RIFT
by *William E. Griffith*, MIT-12, \$2.95 †

A HISTORY OF WESTERN
TECHNOLOGY by *Friedrich Klemm*,
heavily illustrated, MIT-14, \$2.95 †

THE DAWN OF ASTRONOMY
by *J. Norman Lockyer*; recon-
struction of the astronomical views †
of the ancient Egyptians,
MIT-15, \$2.95

THE NEW ARCHITECTURE AND THE
BAUHAUS by *Walter Gropius*,
MIT-21, \$1.95



These ten just published

THE CITY: ITS GROWTH, ITS DECAY,
ITS FUTURE by *Eliel Saarinen*,
MIT-31, \$2.95 †

SCIENTISTS AS WRITERS, edited by
James Harrison; a sampler; †
MIT-32, \$1.95

CANDIDATES, ISSUES AND
STRATEGIES: A COMPUTER
SIMULATION OF THE 1960 AND 1964
PRESIDENTIAL ELECTIONS, Second
Revised Edition, by *Ithiel de
Sola Pool, Robert P. Abelson, and
Samuel Popkin*, MIT-33, \$2.45 †

NATIONALISM AND SOCIAL
COMMUNICATION: AN INQUIRY
INTO THE FOUNDATIONS OF
NATIONALITY by *Karl W. Deutsch*,
MIT-34, \$2.95 †

THE PSYCHO-BIOLOGY OF
LANGUAGE: AN INTRODUCTION TO
DYNAMIC PHILOLOGY by *George K.
Zipf*, MIT-38, \$2.95 †

COMPUTERS AND THE WORLD
OF THE FUTURE edited by
Martin Greenberger; a symposium
including the views of "a †
Who's Who of American computer
science," MIT-1, \$2.45

WHAT SCIENCE KNOWS ABOUT
LIFE: AN EXPLORATION OF LIFE
SOURCES FROM PRIMEVAL SLIME
TO MAN TOMORROW by *Heinz
Wolterreck*, numerous photographs,
MIT-35, \$2.45

ENZYMES by *J. B. S. Haldane*,
MIT-36, \$2.45

UNIVERSALS OF LANGUAGE, Second
Revised Edition, edited by †
Joseph H. Greenberg, MIT-37, \$2.95

THE NATURE OF METALS
by *Bruce A. Rogers*; on the nature
and behavior of metals, for the
general reader, with numerous
illustrations, MIT-39, \$2.45

MECHANICS, MOLECULAR PHYSICS.
HEAT, AND SOUND by *Robert A.
Millikan, Duane Roller, and
Earnest C. Watson*, illustrated, †
MIT-40, \$3.45

EXPERIENCING ARCHITECTURE
by *Steen Rasmussen*; enthusiasm
for excellence in design conveyed
through discussion ranging from
teacups to the Peking Winter
Palace, MIT-2, \$2.95 †

**BEYOND THE MELTING POT:
THE NEGROES, PUERTO RICANS,
JEWS, ITALIANS, AND IRISH
OF NEW YORK CITY**
by *Nathan Glazer and
Daniel Patrick Moynihan*
MIT-13, \$1.95 †

the negroes
puerto ricans
beyond the melting pot
jews, italians
and irish of
new york city
by *Nathan Glazer and Daniel Patrick Moynihan*

INFORMATION THEORY: AN
INTRODUCTION FOR SCIENTISTS AND
ENGINEERS by *Gordon Raisbeck*, †
MIT-16, \$1.95

THE TAO OF SCIENCE: AN ESSAY
ON WESTERN KNOWLEDGE AND
EASTERN WISDOM by *R. G. H. Siu*.
MIT-17, \$1.95 †

A HISTORY OF CIVIL ENGINEERING.
AN OUTLINE FROM ANCIENT TO
MODERN TIMES by *Hans Straub*.
MIT-18, \$2.45

A HISTORY OF MECHANICAL
ENGINEERING by *Aubrey F. Burstall*,
MIT-22, \$2.95

BRETT'S HISTORY OF PSYCHOLOGY
edited and arranged by *R. S. Peters*,
MIT-24, \$3.95

EX-PRODIGY: MY CHILDHOOD AND
YOUTH by *Norbert Wiener*, †
MIT-19, \$2.45

I AM A MATHEMATICIAN
by *Norbert Wiener*; this volume
and *Ex-Prodigy* comprise
Norbert Wiener's autobiography,
MIT-20, \$2.45

GARDEN CITIES OF TO-MORROW
by *Ebenezer Howard*; little-known
classic originally published in 1898.
MIT-23, \$1.95

BIOLOGICAL ORDER by *Andre Lwoff*;
up-to-date summary of the field, †
MIT-26, \$1.95

NINE SOVIET PORTRAITS
by *Raymond A. Bauer*; compelling
insights into life behind the
Iron Curtain, MIT-27, \$2.45 †

REFLEXES OF THE BRAIN: AN
ATTEMPT TO ESTABLISH THE
PHYSIOLOGICAL BASIS OF
PSYCHOLOGICAL PROCESSES
by *Ivan M. Sechenov*, MIT-28, \$1.95 †

THOUGHT AND LANGUAGE
by *Lev Semenovich Vygotsky*, †
MIT-29, \$2.45

CHINESE COMMUNIST SOCIETY:
THE FAMILY AND THE VILLAGE
by *C. K. Yang*; first-hand accounts
by trained and objective observers,
MIT-30, \$3.95 †

†Also available in hardbound editions.

"Comparable in ultimate importance to
Galileo or Malthus or Rousseau or Mill"
— *New York Times*

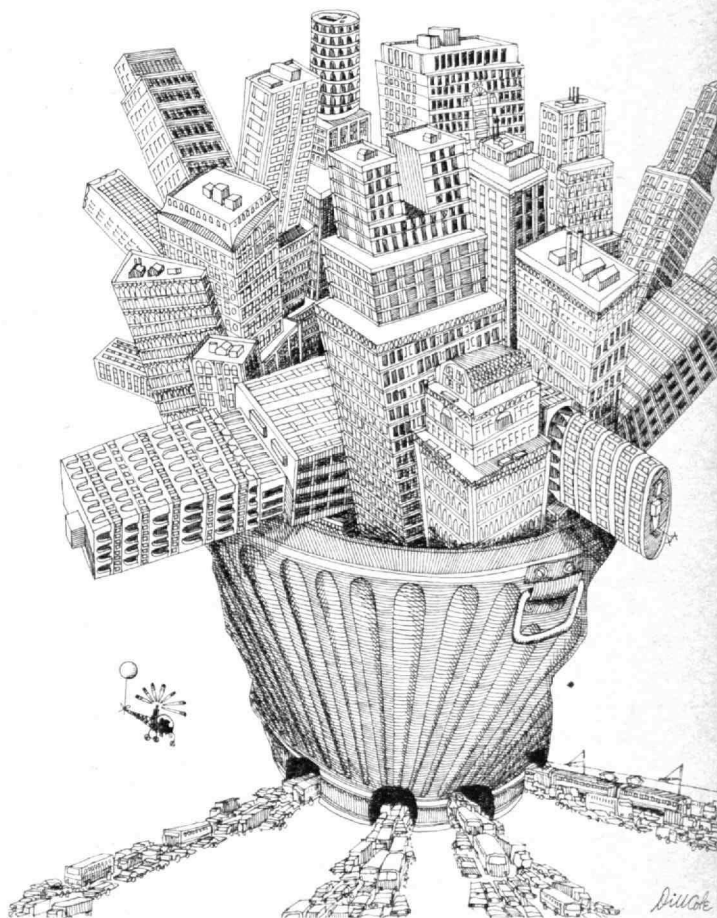
**CYBERNETICS:
OR CONTROL AND COMMUNICATION
IN THE ANIMAL AND THE MACHINE**
by *Norbert Wiener*. MIT-25, \$1.95 †

By John Ely Burchard, '23

Polis was, in the beginning, simply the Greek word for a physical city. The Greeks added to this another of their words *metro*, meaning womb. Thereby they coined *metropolis*, the womb, mother or parent city of a state or a colony. The idea of the city as a mother of colonies was the original idea. Certainly its earliest concern was with government and trade. There was nothing that required the metropolis to be the largest city, though it usually was.

Metropolis soon came to mean more than capital city. There were other things to be mothered or fostered, the world of knowledge, the world of the arts, the world of finance. The term metropolis became an indication that the city led in many ways, not solely political.

This lecture by one of the Institute's most eloquent and widely known commentators was a highlight of the 1965 Alumni Seminar on the M.I.T. campus. Dill Cole of the Eucalyptus Studio, Baltimore, did the drawings.



JANUARY, 1966



be said of other national metropolises: of Madrid, Brussels, Copenhagen, Stockholm, Warsaw, and Rome (when the latter was the dominant Italian city rather than only one of a group of city states competing not always successfully for supremacy against Venice, Florence, Genoa, Milan, or Naples). Of course beyond the capital metropolises, there were single fine things happening, say, in Gothenburg or Uppsala, in Milan or Venice. But despite these remote excellences, even the elaborate excellences of Venice, there was no doubt that London set the tone for England, that all roads led to Rome, or that, as Francois Villon put it, there was no good gossip save in Paris.

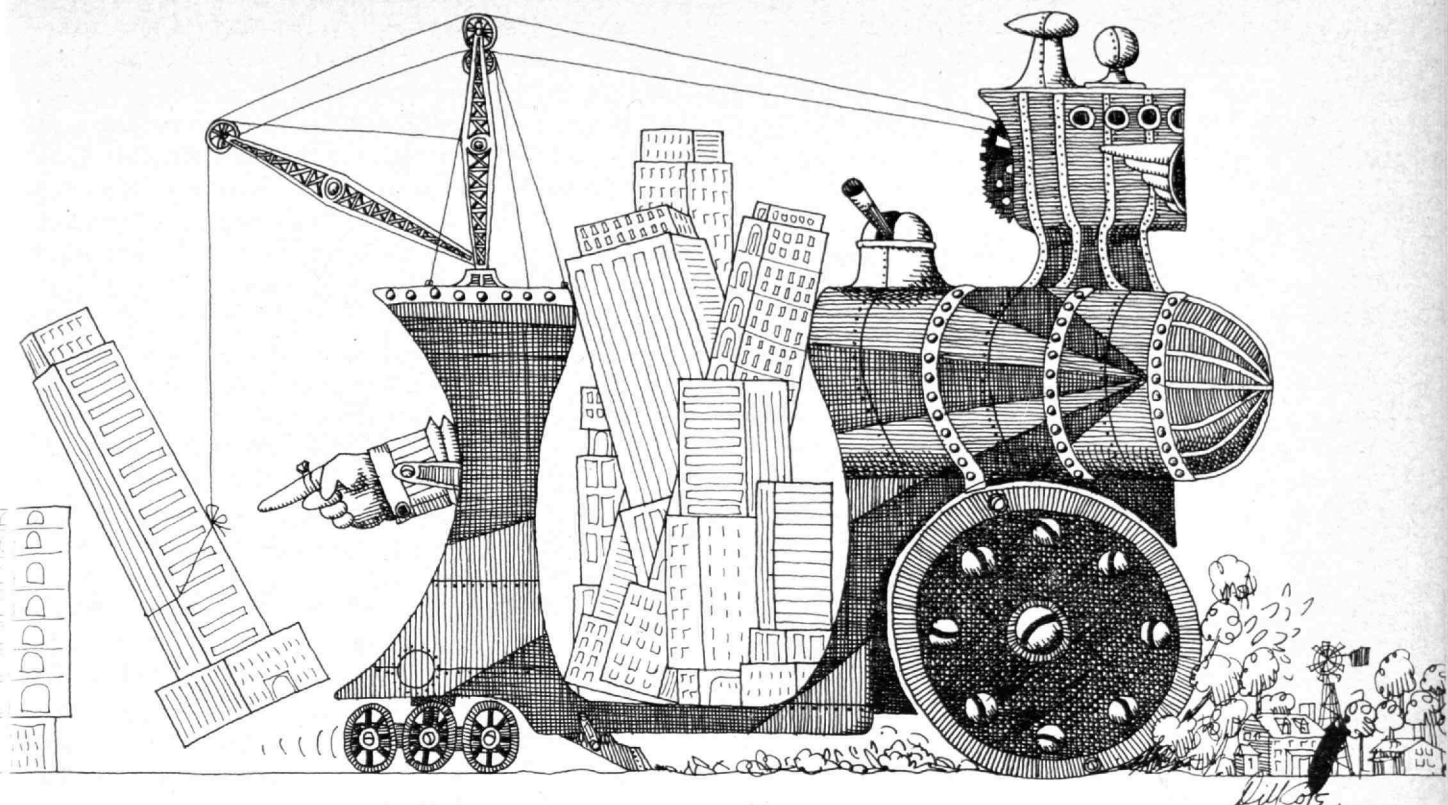
It was not inevitably so. On differing grounds Hanover, Hamburg, Gottingen, Jena, Cologne, Munich, and Dresden could not concede the metropolitan diadem to Berlin, which has never quite managed to be the cultural womb of all Germany. In our own country where the capital city has not been the traditional womb of anything save legislation, tax collection, some kinds of management and final juridical decision, we have seen the growth of a number of specialized or competing mothers of our culture. Among these we must surely name Boston, New York, Philadelphia, Chicago, and Los Angeles. This kind of pluralism may be a function of our national size; it cannot be a function of our regional differences which are much less than they have been, say, in France or Italy or even England. But it may be in part a consequence of a vacuum in the national capital. Such a vacuum always seems to have occurred when a capital was created out of whole cloth, as at Washington, Ottawa, Canberra, and no doubt, in future, Islamabad. Even St. Petersburg is not much of an exception to the failure of the created capital to assume

intellectual and aesthetic leadership, and its leadership is of course gone now. But whatever the reason, our mother cities are plural in America.

A metropolis probably has a critical size below which it cannot drop and remain a metropolis. Of course the critical size is dependent on the quality of the population as well. But though size is necessary to the metropolis it is not sufficient. Detroit is not a metropolis. It is the womb of very little except the motor industry and that is not enough to qualify it. Nor is it enough for a city merely to be beautiful and an avid consumer of culture. The womb fosters and gives rather than takes. It is on such grounds that I called Los Angeles a metropolis, and did not include San Francisco though this is a very thin decision. I could similarly name Chicago and not St. Louis; Philadelphia and not Pittsburgh though Philadelphia's historic claims may have to yield to Pittsburgh's greater energy; Boston and not Dallas though I might perhaps want to lay my long-run chips in the Southwest; Boston could lose more valuable things than the peripatetic Braves. A metropolis has *elan*, confidence, courage; it is not only a residue of history. It can be stifled by parsimony or low-grade politics. A good mayor is not enough, though it helps.

But that is as far as I want to develop this. What I have said up to now is that I use *metropolis* in the Greek sense and not in that of the United States Census. We are going to have to get along with a multiplicity of metropolises. While this is inevitable, it may also be good. Perhaps we should aim for the day when every city is a metropolis, that is, a generator of a variety of important and fine manifestations of our culture.

There is likely to be a good deal of turbulence when things are gestating and the great historical metropolises



have frequently been turbulent. In a way they were the wombs of turbulence as well as of everything else.

Finally I have said that the metropolis is the womb city; it is probably a pleasant place to live in and certainly an exciting one. A city cannot become a metropolis simply by being big enough; nor can a city become a metropolis merely by being pleasant enough.

II

The Greeks had another word, *megalo*. This meant large, or great. No more. In most contemporary usage the meaning has stretched to have pejorative connotations, almost pathological, as though *megalo* were to mean *too* great. In much urban shop-talk emanating from those who have suffered from *megalophobia*, largely Patrick Geddes, passed on through Lewis Mumford, we now tend to take it for granted that a *megapolis* is a city which has become too big, incapable of the functions of a *metropolis*, doomed like the Brontosaurus to die of oversize. Jean Gottmann has certainly suggested the contrary in his important book. I am going to side with him, and not Mumford. We must, I think, accept *megapolis* as inevitable and we need not be too quick to write it off as undesirable. This *megapolis* will be substantially larger than anything we now know, stretching, for example, literally and not figuratively, from Portland to Richmond, from Milwaukee to Toledo, from San Bernardino to Santa Barbara, and so on, and numbering more than 50 million people in each such network. Can such a *megapolis*, in fact, also be a metropolis, or harbor within it some metropolises? Or are the terms *megapolis* and *metropolis* mutually exclusive?

III

But before suggesting an answer we must look at the Latin-rooted part of the title.

The Latin *urbanus*, whence came our *urbane* and *urbanity*, meant merely, belonging to the city or town rather than to the country. *Civilis*, whence our *civilized*, meant the citizens of a common society, urban or rural as it might be. But soon city did dominate country in Rome. *Civil* began to mean having the manners of a citizen, *as distinguished from those of savages or rustics*. It could not be long before *urbanus*, belonging to the city, was taken to include the notions in the word *urbane*, of being refined or polished. *Urbanity*, the quality of being urbane, included not only the idea of urban sophistication but also the idea of urban courtesy. By the end of the Nineteenth Century this was so fixed a concept that Matthew Arnold could speak of "the tone of the city, the center, the tone which always aims at a spiritual and intellectual effect, and, not excluding the use of banter, never disjoins banter itself from politeness, from felicity."

Such a view was able to consider the polite life of Belgrave Square in isolation from the raucous world of Billingsgate, two worlds that never had to meet. The latter could be excluded from the notion of *urbanity* though it was in the city. The antonyms of *urbanity* then became "surliness, crudeness, roughness." The roughness of Billingsgate and the suavity of Belgravia were able to coexist in Victorian London. But now Billingsgate is everywhere and Belgravia hard to find. We meet the antonyms in every city street and no doubt we encounter them with greater frequency and vehemence on a cross-town street in Manhattan than while pausing in

a hamlet on Route 66. Thus the suspicion arises that the surliness, the crudeness, the roughness, are partly due to the tensions and discomforts of megalopolitan life. Many people quickly conclude, too quickly, in my view, that *megalopolis* inevitably breeds inurbanity and discourages urbanity. It was the examination of this proposition that my title originally suggested. I have added to it the different idea of *metropolis*.

It is different because refinement and polish are not synonymous with creativity; indeed, some might be found to assert that they are the foes or at least the dampeners of creativity. If this were positively so and if we could also maintain the further assertion that crudeness and impoliteness were favorable to creativity, then we might conclude that *urbanity* was hostile to *metropolis* and *inurbanity* hospitable to it; then *megalopolis*, if a promoter of *inurbanity*, is also a promoter of *metropolis*.

Like any simple thesis it is attractive. Each of us has no doubt encountered a few geniuses or near geniuses who have been surly, crude, and rough, far from urbane. But the trouble is that there are other creative people whose behavior is gentle and civilized, and many rude people who are completely uncreative. The best we can say is that the notion of *metropolis* and the notion of *urbanity* are only remotely connected. A city may be pleasant for ordinary life and urbanely uncreative. Another may be brutally unpleasant and yet be rudely creative. The best cities would, perhaps, be those which were urbane metropolises, a San Francisco which was more creative, a New York which was more urbane. It may not be impossible. At least in history there have been urbane large metropolises such as London, Paris, and Peking. But that it has happened in history does not mean that it is happening now; or even that it is possible now. The question before us, then, is whether by its mere size *megalopolis* is destroying either urbanity or *metropolis* or both; and whether, if so, it is inevitable.

IV

A great many writers and a few thinkers are asserting that this is so. In examining their credentials we must find out whether at heart they are not really against all cities, whatever their size. It is an ancient and durable notion that the city is, *ipso facto*, evil.

Nomadic tribes, or those who must win a Promised Land through mobile warfare, have to guard against those of their numbers who want to settle down among the urban fleshpots. Hence the destruction of the Golden Calf and the elevation by Moses of Jahveh, the war god from the mountain. It is the city in the Bible which symbolizes sin, the city of Tyre, Sidon, Sodom, Gomorrah, Babylon. Such bad things are presumed not to happen in the hayloft or in the cool vineyards where the vines are pruned at the close of a peaceful day.

It is in the country, not the city, where the curfew tolls the knell of parting day. Bells in the city suggest disaster. It is in the country that the world is left to dark-

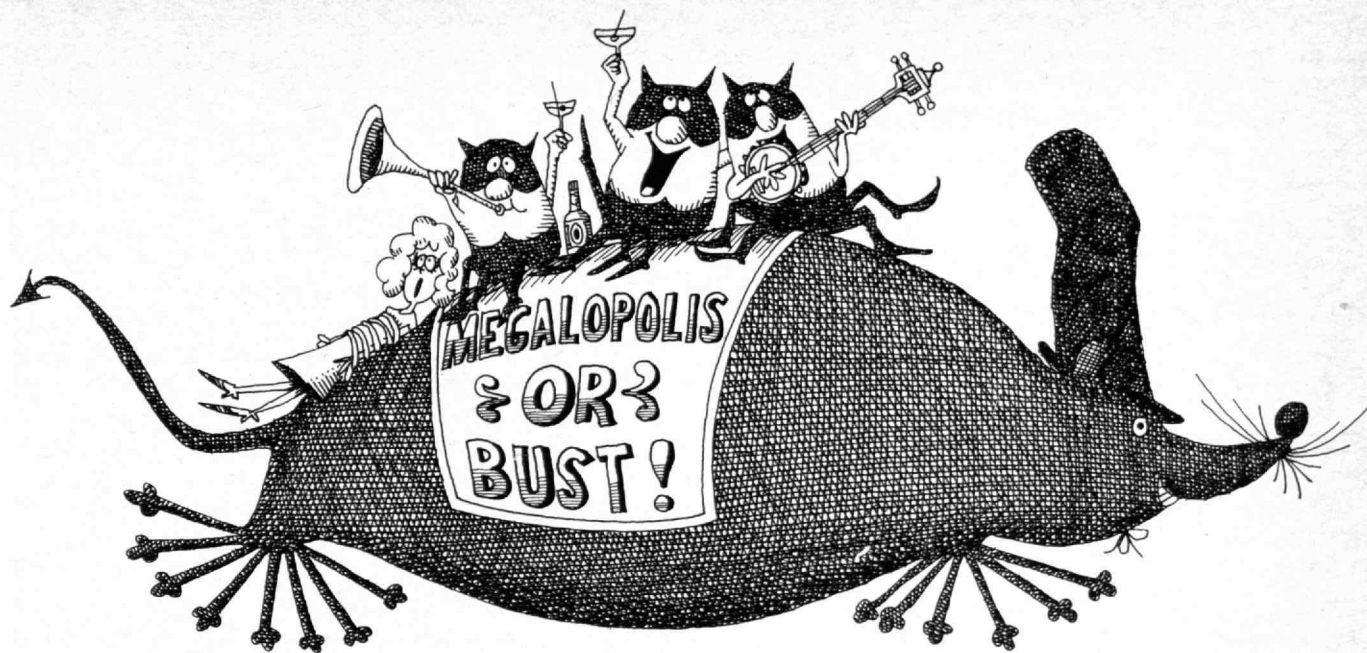
ness and to you, and it is in the city that darkness is to be feared. The dew, the bird, the smell of new mown hay, the sunrise, the sunset, the very stars are more palpable or visible in the country. The dew is a nuisance in the city and the drops do not linger in its dirty spiders' webs; the bird does not sing, and the only birds that find the city viable are the obscene pigeons and sparrows; the country mouse is a wee sleekit couwerin' timorous beastie, the city rat a venomous enemy of health. There is always enough truth in this so that we have to pause.

The universe *may* seem nearer in the country; life may be seen more directly. The country may indeed be more beautiful than the city when it has not been exploited by man or even when, as in much of the English countryside but in little of ours, it has been cultivated tenderly. Nature can create its own ugly spots but it is more effective in destroying itself when man lends a hand. There are no skyscrapers to match the magnificent mountain peaks, no cathedrals to match the greatest forests. Man's efforts are more fallible. But to state this obvious truth does not carry us far since it is only to say that the Garden of Eden was perhaps finer before God endowed it with people and that all the subsequent deterioration is merely a consequence of that expanding act. It is only the unclimbed peak which does not sport an empty sardine tin.

These feelings are deep rooted, as old as Cain and Abel. Most people, even most city people, hold them, at least in a not very remote memory. The fruit turns up everywhere. In the *commedia dell'arte*, a common story tells how the national outwits the foreigner, or the simpleton outwits the wise man, but the most popular may show the country bumpkin deceiving the city slicker. Writers in many countries have praised the country or the countrymen or even the savage as more meritorious than the city or civilized man, and these writers are as different from one another in other matters as Rousseau, Wordsworth, Tolstoi, Adam Smith, and Washington Irving. Thoreau went to the woods, he said, "to live deliberately, to front only the essential facts of life" in a day when neither Cambridge nor Concord could be said to be cities at all. Shelley wrote, "Hell is a city much like London—a populous and smoky city."*

This anti-urban feeling has been more durable in our country than, say, in western Europe. Here we have felt the persistent wish to believe that the countryman is somehow nearer to realities of life than the city man, that in some ill-defined way he is the "better" man, more versatile, braver, more honest, more capable of improvisation, more moral, even more likely to understand the truth. We can see evidence of this at almost every level of our intellectual display. It is in the rather impressive report Lucia and Morton White have put together to suggest that a preponderance of our most eminent intellectuals across our history have entertained one or another major suspicions of the city. It can be

*Peter Bell the Third, Part III, St. 1.



It is an ancient and durable notion that the city is evil . . . It is the city in the Bible that symbolizes sin.

noted in the aversions and fears of the city displayed by such lesser men as Hamlin Garland, who slunk fearfully between railroad stations in downtown Chicago at mid-day. At the end of the Nineteenth Century, more demagogic firebrands, like Josiah Strong, alarmed by the influx of "alien and idolatrous newcomers" who clustered in the cities, proclaimed that "The first city was built by the first murderer, and crime and vice and wretchedness have festered in it ever since." In our day, it can be scented in the prose of Mumford and his fellows. Until recently it was reflected still in the distribution of representatives in our legislatures and still is in the places where we think it better for presidential candidates to have been born.

There is, of course, a considerable amount of nonsense in such a view but there has not been much anti-rural literature. If you want to stop cherishing some of these ideas, yourself, the best deflater I know is *The Agrarian Myth* by Richard Hofstadter. But even such serious studies have a slow take. The over-admiration of the country and over-suspicion of the city continue despite the fact that there are very few genuine country-folk left, and that we have never had, and therefore possess no residues of a genuine peasant culture. Moreover, even what we might call a rural culture has been modified. It has changed on the farm, through the greater efficiency of large-scale agricultural enterprise. It has changed in the farm family by introduction of the automobile, rural electrification, the telephone, radio, and television. The information, the conversation, the entertainment, are the same ones to be encountered in the city. They are generated in the city by country boys who have immigrated there. The urban and the rural exposure is simultaneous. Only the refinements of these at the level of the live encounter or of less generally admired performances which the mass media cannot or will not purvey, remain the special

privilege of the city or at least of a few cities. This is not an unimportant difference of course.

V

Many among those who have deprecated the city have also felt that the isolation of the farm was unsatisfactory. These have turned to praise the village as the best way of life. The village is a myth which ought also to be deflated but no one has yet arisen to do it as Hofstadter has done. A novel like Sinclair Lewis' *Main Street* took us part way. *Peyton Place* took us nowhere. What the size of this town or village ought to be has been left in the air. For a long time 50,000 was the talking figure. Lately it seems to have crept up. The people who have urged such congeries have noticed the crime and violence and noise and dirt and sinister danger of the city, the degree of isolation from one's neighbors, the generally simpler aspects of "village" life, and have concluded that these elements of human contact outweighed the fact that the city might offer grand opera or a great collection of paintings while the town might have to settle for Chautauqua or less. The sophisticated urban pleasures, they argued, weighed less than the general humanity that the town provided. They thought, and think, that if the conversational encounters are at a lesser level of intellectual exchange in the village, they are nonetheless more naturally arranged. They feel that in an emergency there will be some immediate neighbor who cares and that people will not stand by idle while watching somebody get hurt. They think such personal interchanges to be better than the advanced techniques which the city will ultimately and impersonally bring to bear on the emergency. Those who take this view are able to overlook the surveillance of individual behavior and the censorship, or at least disapproval,

of nonconformity which villages or towns have always exerted to a degree impossible in the city. The city has, in fact, been the permissive place in which strange ideas can be more readily advanced and considered. In sum, as between the big experience and peace, they have opted for peace, as between order and privacy they have opted for order.

However the American people may have agreed with this view intuitively, they have not agreed with it in their actions. They have flocked to the cities. But it may be that they have flocked there for no good reason. If the city does not provide any of the advantages which the village buffs are ready to forego, while at the same time providing all the disadvantages which the village buffs describe, the newcomers have made a bad choice. It is ridiculous to pay the prices of city life if the city advantages have not been acquired thereby. But the flow to the towns and cities is not as deliberate as that, obviously, or the development of the cities would not have been as it is. The slurbs, the plasmodial peripheries, the never-never land of belt highways and supermarkets and drive-in movies could not have been designed. And thus it may be that despite the large concentration of Americans now in cities and the steady flight both from farm and from village, the thrust of our thought may have been the guilty one that this was probably a bad thing. It may indeed be this sense of guilt that prevents Americans from joyously building great cities, cities which are urbane and metropolises.

VI

When Americans came to live in cities they tried to keep all the advantages of the country, at least for their families. They rejected the European solution of urban living, for example in apartments, which they even decried for a time as promoters of sin. They sought the best of all possible worlds through the development of the suburb and of commuting. They hoped on the one hand that the suburb would develop the cohesiveness of the village, and perhaps its completeness. On the other hand, they expected to partake of the things that could happen only in the big city. Ultimately, neither of these hopes was realized. The suburb was never able to offer the range of life of the village or its relatively minor segregations. The intellectual and economic life of the males or most of them was lived somewhere else. So the suburbs became nothing more than dormitories; if the suburban population were affluent the dormitories might be pleasant, occasionally elegant; life could center around the country club, a homogeneously well-to-do population could continue to vote Republican, maintain racial, economic homogeneities and even a homogeneity of middle-brow taste. And for these people as long as the transport system was radial and not circumferential and everybody arrived at the focus, it was even possible to use the city occasionally for pleasure for the whole family, even the pleasures that had to be enjoyed at night. But as the distances grew further, the circumferential patterns of the automobile reduced

the radial necessities of the train, the train itself declined, the visits to the city for anything but work fell away so that savoring the offerings of the city became less common. It was easier to play bridge accompanied by a highball at home. But still such a way of life might remain tolerable for the suburbanites and later for the exurbanites of some social and economic classes, to which no doubt most of you belong. But the consequences for the rest were intolerable. The suburbanites and the exurbanites washed their hands of urban problems, declined to share in the cost of operating the city whence they drew their sustenance, either the economic or the political cost. They split among themselves as to jurisdictions, of which there are more than 100 around St. Louis, more than 1,000 around New York so that any kind of urban co-operation became impossible. Declining to hang together they proceeded to hang separately. And they are still doing it. Unhappily it takes a long time for the idea to penetrate to the dweller in Pasadena or Pawling that what is happening in Harlem or Watts is not as remote as what is happening in Brazaville.

The one compelling reason these days for large groupings of people is not the economic or military reason that may once have created the city. Flexibility of employment opportunity was an important early force for employer and employed alike. As the demand for unskilled labor diminishes, the flexibility of the individual laborer, even the skilled one, diminishes, and the city as a labor market is much less important than once it was, save, of course, for service people. But these naturally are a function of the size of the city; not the other way 'round. The city as a retail mart also has been diminished in importance except for *those with special tastes*. This is the important potential remaining to the city. It provides a large grouping of people who offer a sufficient probability of furnishing enough with a common special interest to support those who cater to it. It does not matter what the interest is. It can be symphony, first-class exhibitions of current paintings, first-class books in libraries or stores, a first-class professional sports contest of any type, or simply an interesting array of unusual cheeses. If you like a special cheese you cannot expect everyone to share this desire. Yet somehow there must be enough people who share it so that at least one merchant can afford to stock it. Also, these people must be near enough to take advantage of the special opportunity, near enough as measured both in time and in amenity of travel. At some point the travel may become so long or so unpleasant that one foregoes the pleasure of the cheese.

There have been occasions, if not many, when a small city has maximized a particular special interest to the point even of world renown, but such renown has been achieved at the cost of other possible interests. You had better like the Passion Play and tourists in Oberammergau, and Bach in Bethlehem. It is not gala in Bayreuth when the Wagnerian trumpets are still, or in Minneapolis when the Guthrie Repertory Theatre is not on dis-

play, although there are still the Twins and the Vikings and now and again the Golden Gophers. The most important potential of the big city is that it *may* maximize the chance for each inhabitant to pursue his uncommon interests in a rich way. To put it another way, the city is an instrument for the maximization of diversity. For this chance it demands certain prices and it always will although the prices need not be so absurdly high as they now are. These are prices of inconvenience, even of stress, of congested travel, of more litter to remove, and of the outlay of time too. If the prices become too high, the opportunity to enjoy the diverse may not seem worth while. It may seem better to punch a tunafish sandwich out of a vending machine than to travel an hour for a soufflé at The Four Seasons. The megalopolis may make no sense even as a provider of diversity if the cost of enjoying the diversity is too high.

In the same way megalopolis makes no sense to a person who can find all his satisfactions in the peripheral life of the standard superhighway, the shrimp in the rough, the drive-in movie, the supermarket and the television console. It is absurd for such a person to pay any of the prices of megalopolis because he gets nothing back. The things are there but he does not want them. I remember once a Persian rug merchant in Beirut who remarked after he had offered me an enormous bargain in rugs, "Nothing is a bargain at any price if you don't want it."

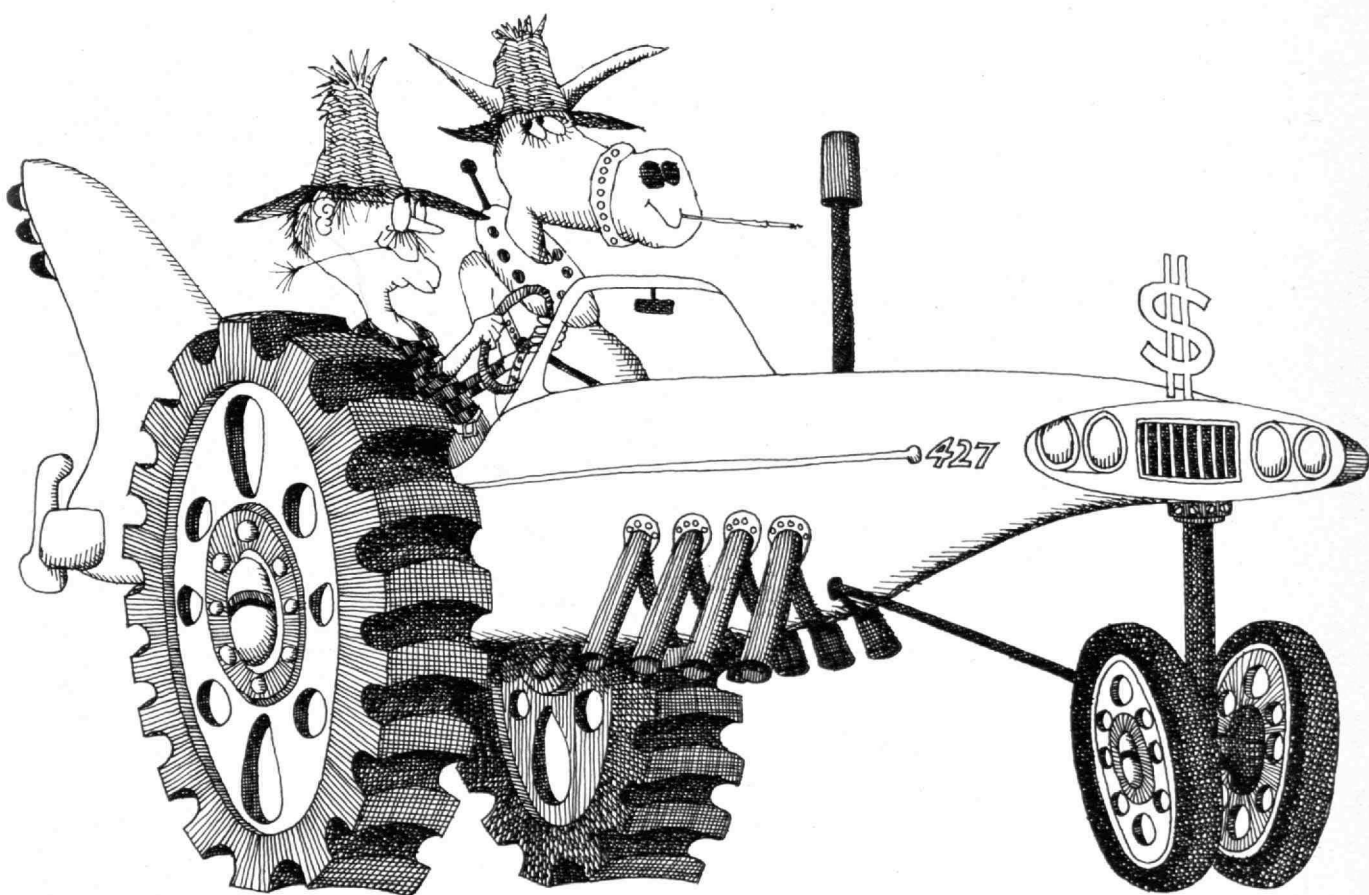
And, of course, the prices of the big city are too high, even right now, if the opportunities are no longer there. On the whole, more American cities are in fact provid-

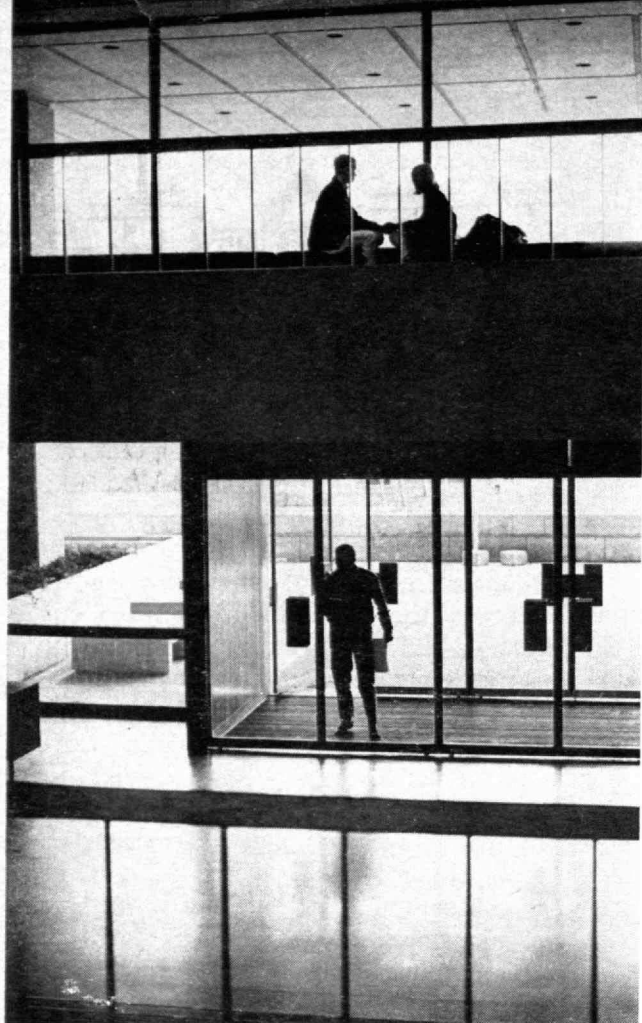
ing more opportunities just as some supermarkets are beginning to carry some exotic items. But they may still not be there for most of the inhabitants of megalopolis because they are simply too far away while the bowladrome is near at hand.

One of the great opportunities of the big city is a widespread acquaintance followed by conversation with interesting people in a variety of fields which are not one's own. This disappears in specialized institutions such as hospitals or research laboratories, and to some extent even in monasteries. The city as a forum of good conversation is important—or has been. As José Luis Sert has put it, the big city makes no sense if it destroys instead of enhancing the opportunity for rewarding dialogue; and this it can do either because it supplies too much background noise, speaking figuratively, or because the conversationalists are no longer there, having all fled to Majorca or Antigua where, if they cannot converse, they can at least think.

All these negatives are not really much of a caricature of the peripheral man who has made megalopolis, filling the chinks on the periphery, spreading like locusts over the possible green belts, destroying the boundaries between former villages and indeed the identities of these villages. He enjoys none of the real advantages of the city and does not seek them out when they are there. He enjoys none of the advantages of the true country—his bird remains the pigeon, his perfume diesel oil, not honeysuckle. He has no particular reason for living here or anywhere else except that by some

(Continued on page 35)





The New M.I.T. Environment

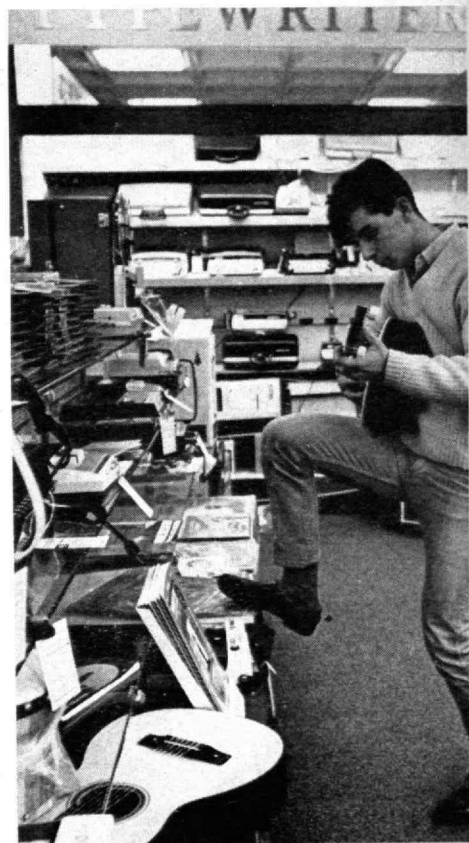
The new Stratton Building is making it much more pleasant

The BBC, in a candid television portrait of M.I.T. this fall, emphasized the Institute's fame for being "hell" at the very moment that one reason for such notoriety was fading into history. The austerity of many students' lives, as well as the work load placed on them, accounted for it. Now, thanks to the opening of the Julius A. Stratton student center, life on the M.I.T. campus is less different than life at the little school up the river.

The Stratton Building, where Ivan Massar took the photographs on this and the next two pages, and the new dormitory for women have greatly changed the environment in which M.I.T.'s students find themselves—in ways that Alumni and Faculty can appreciate more fully than the Class of 1969.



The Tech tailor, the Coop barbers, and many others who have served M.I.T. men for years now have their quarters in the new building.

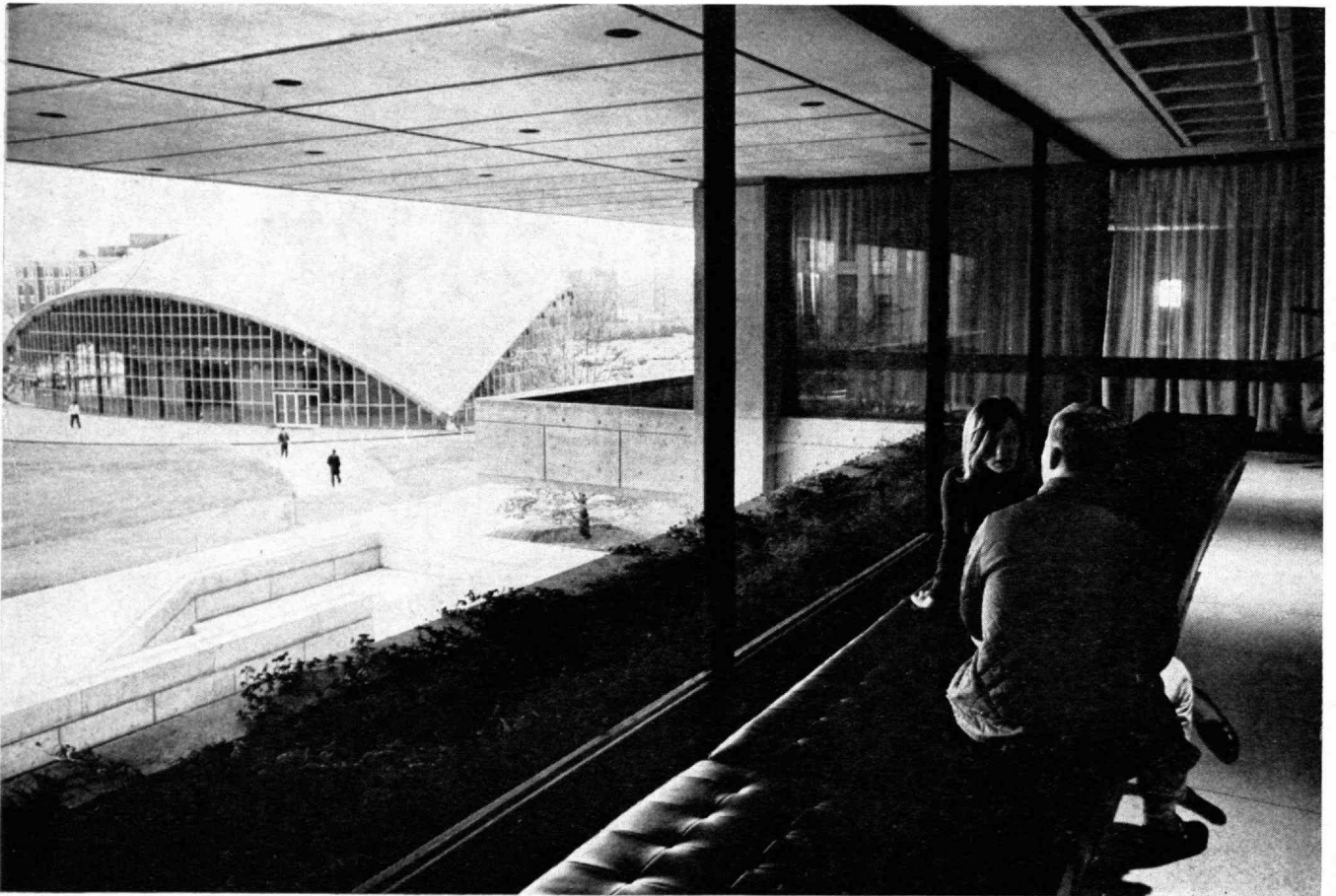
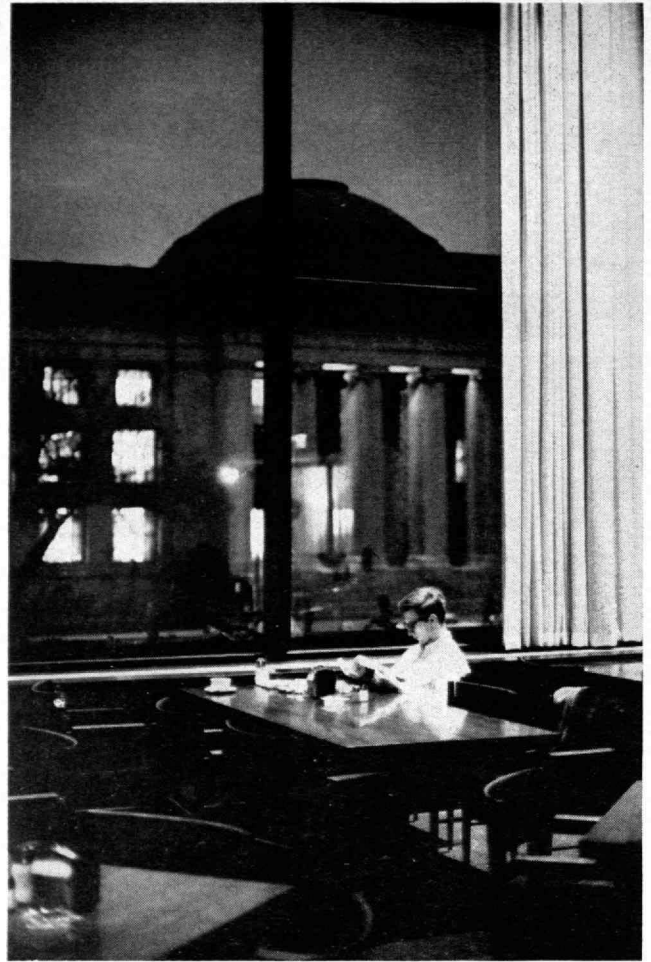


Students need no longer go to Harvard Square or Boston for such things as sporting goods, reading matter, music, or clothing.

Alumni Gifts Made New Center Possible

Named and memorial rooms in the Stratton Building are the Harold E. Lobdell ['17] Memorial Dining Room, a gift of the Institute's Alumni; Sala de Puerto Rico, built through contributions of Puerto Rican Alumni; music practice rooms given by the late Ferrari P. Ward, '26; the Rita Welch Gruber Memorial Room, a music practice room that was the gift of Rudolf E. Gruber, '16; the Louise B. Nichols Memorial Rooms, music practice rooms that were given by William H. Nichols, '27, and Arthur A. Nichols, '28; and the Institute Committee Room, which was a gift in memory of William R. Ahrendt, '41.

Other donors whose gifts were designated for the Student Center were Alpha Phi Omega, Alan R. Brennecke, '61, Ellis W. Brewster, '13, the Class of 1963, William A. Coolidge, Joseph Harrington, 3d, '61, the Charles Hayden Foundation, Stephen M. Levy, '63, Frank Marcucella, '27, the M.I.T. Lecture Series Committee, Partners of Morgan Stanley and Company (in memory of Cortelyou L. Simonson, '27), Paul Padget, Jr., '58, the Erwin H. Schell Memorial Fund, Edward H. Sonn, '61, Helen S. Spencer, the A. W. Stanley Charitable Foundation, Norton Starr, '64, David Y. Stowell, '61, Terry A. Welch, '60, Roger A. Whitman, '61, and Samuel P. Yamin, '60.



PROFESSIONAL EDUCATION AND THE HUMANITIES

The scientist and the humanist must meet on common ground to prepare men for life in the 21st Century

By Julius A. Stratton, '23

Dr. H. Guyford Stever, a member of the M.I.T. Faculty from 1946 until recently, was inaugurated as President of the Carnegie Institute of Technology last fall.

At a dinner celebrating the occasion, President Stratton of M.I.T. spoke as follows:

I would like to begin this evening with a few words about the occasion that brings us together. It was in the midst of World War II, between bombings in London, that I first met Guy Stever and was immediately captivated and impressed. Once we were home again on this side of the Atlantic, I lost no time in persuading him to join us in Cambridge.

President Barnett, President DuBridge, and I represent three institutions that have had a part in preparing Dr. Stever for the great responsibilities that now lie before him. He owes to Colgate the firm foundations of a liberal education. Caltech gave him depth in his own field of physics. And perhaps I can claim that M.I.T. finished him off!

But it isn't only in school that one prepares for a college presidency. The other day, for example, I discovered that at one point in his early career your new president had managed a newspaper route. I don't know whether Lee DuBridge ever carried papers, but I did, and with a notable difference in my own experience. For while I took great delight in leaving a paper at each doorstep, I so dreaded making collections from my subscribers at the end of the month that it proved to be a highly unprofitable enterprise. Evidently Guy suffered from no such inhibitions, for the record shows that the proceeds of *his* route took *him* a good way through college. All this augurs well for the financial future of Carnegie, but I am afraid that the alumni had better be braced for a hard time!

Now, in a more serious vein, we shall miss Guy Stever very much at M.I.T. Yet we rejoice in his progress and

like to believe that some of the great honor that you have paid him in your choice of a successor to Dr. Warner reflects a little upon us too. We extend both to him and to Carnegie Tech our warmest wishes for the years ahead.

☆ ☆ ☆

Some months ago, when I was invited to take part in the events surrounding this inauguration, the hope was expressed that I would comment tonight upon the relation of the humanities to professional education, particularly in the context of an institute of technology. I might have wished for an easier assignment, for the theme is hardly a new one. Since the foundation of institutions such as ours 50 or 100 years ago, the place of the humanities has been a lively subject of debate.

In many respects we were patterned after European models in the middle of the Nineteenth Century. But the idea that such subjects as English and history and modern languages should have a part in the professional education of engineers was distinctly an American innovation. It is significant that today, when nearly every country in western Europe is engaged in a reassessment of higher education, they are examining closely the American experience and have shown a particular interest in the manner in which we have drawn the humanities into our programs in science and engineering.

The recent report of Lord Robbins, for example, proposes sweeping revisions in the plan of higher education in Britain. Several years ago both Dr. DuBridge* and I were invited to appear in London before the Robbins Committee, and I recall that the questions that were pressed upon me most strongly dealt precisely with this issue of the humanities.

The German technical universities also are currently in a state of ferment and change, and they have taken major steps in the integration of liberal studies into the scientific and technical curricula.



PRESIDENT STRATTON

Without any doubt, the humanities are a real presence on the campuses of such institutions as Case, Caltech, Carnegie, and M.I.T. We make much of them in our discourses to the public. The concept is fundamental, and the intent has been sincere. Yet I think all of us must acknowledge that although a great deal has been accomplished and though the humanities have indeed had an impact upon our institutions, we still have far to go if they are to come finally into their own. The ideas that I present to you briefly this evening carry a certain sense of urgency. They express my own deep conviction that in the higher education of scientists and engineers, the humanities must be brought into full partnership.



I recall very vividly an incident that occurred several years ago at the Saturday Club, an old Boston institution with the traditions of Emerson, which describes itself as "a pleasant, utterly informal company of men, more or less eminent, having a long lunch together on the last Saturday of each month." The poet Robert Frost was there that day, and after a while the conversation turned to the teaching of humanities to scientists and engineers. Suddenly, to the dismay of almost everyone, Mr. Frost pounded the table and said to me with great bitterness: let the scientists and technologists take care of their own affairs, which are going badly enough; let them play with their hardware, but let them leave the

important problems of this world to us, to the poets and the philosophers.

Mr. Frost, of course, was not alone in his fear and sometimes contempt for the works of modern science. And it may very well be that he distrusted the scientists more than he did science itself. There are still those who believe in the desirability and even the feasibility of such a division of the world's labor. Yet this idea does injury to the cause of the humanist as well as to science and runs counter to reality. For whether we will or not, science cannot be isolated from the rest of human affairs. Nor can anyone understand the stream of art and literature and philosophy today without some perception, some awareness of the great currents of scientific thought. We are a single society, a single world, with a single complex of human problems. And science in effect is simply the search for comprehension, the attempt to unravel some part of the mysteries of the universe which we inhabit.

Contrary to a very common belief that the progress of science is leading us toward a fragmentation of knowledge and increasing specialization, I see clear evidence of a growing confluence of fields and disciplines. Today, for example, it is extremely difficult to draw a line of demarcation between what constitutes pure science and modern engineering. It is difficult to isolate physics from chemistry, or chemistry from biology. And engineering is itself a continuum, extending into economics, political science, and management. But this flowing over into broader areas goes much further. By the very nature of their wider concerns and the character of life as it is today, scientists and engineers are drawn deeper and deeper into issues and decisions whose import is far more than technical. And it is for such responsibilities, for this new order of citizenship, that we must prepare the graduates of our institutes of technology.

At the heart of this matter is the ideal of the true professional estate. Let us think for a moment not about scientists or about engineers, or about lawyers and doctors, but about the qualities that should distinguish the professional man or woman.

First, of course, there is the essential requirement of complete competence, of a depth of understanding about some special field at a high intellectual level. Just the other day I came across as clear a statement of this requirement as one might wish. It appeared over 90 years ago in the annual report of the Head of the Department of English at M.I.T.

"The professional student," he said, "comes for a distinct purpose; he wishes, for instance, to be made an engineer, and he must be trained so thoroughly in engineering studies that his bridge will not break down through faults of construction. It would be small comfort to his employers if that should happen, that he could report in Addisonian English, and with unimpeachable logic, the precise reasons why it broke down."

This kind of mastery implies more than a command of current practice. It calls for such an understanding of fundamentals as to resist obsolescence and to instill a

confidence in one's own power to maintain a position in the forefront. But beyond the requirement of commanding knowledge and adaptability to change and innovation, the professional estate is a way of life. It reflects a point of view—a concern for consequences beyond technical terms; a comprehension of the impact of one's works on the intellectual and spiritual life of the individual and of the society; a willingness to administer to the public welfare; a sense of civic responsibility; an understanding of our institutions that derives from a sense of history; a taste for excellence and a capacity to recognize and to appreciate the beauties of ideas, of art, and of literature. It calls for a commitment to the ethical principles on which decisions must rest. It is expressed through a reaching down for fundamentals with a desire to get to the essence of the matter, and, above all, an understanding of one's own relation to what has gone before and what is to come. In sum, a human perspective. Admittedly, these are virtues that few men ever achieve completely, but ones to which we hope our graduates will aspire.

It would be unreasonable and ill-advised to assume that the faculties of English, of history, of philosophy, or of languages in our technical institutions can alone develop and instill these qualities in our students, or that the burden should be solely theirs. Yet from time immemorial, we have looked to the humanities for inspiration and leadership in just this realm of ideas. And if institutions such as Carnegie and M.I.T. are to fulfill their responsibility for professional education in this highest sense, the humanities must be more than peripheral. They must become central to our endeavor. It is in this perspective of a truly professional education that we must give them encouragement and support and that they, in turn, must respond to this challenge.



And now how are we going to bring this about? It won't be easy to achieve, nor is there in my judgment any unique way to augment the strength and consolidate the position of the humanities in our professional schools. We shall have to try many experiments and explore many roads.

While all these institutions have much in common, they also have different histories, different resources, and different manners of approach. Carnegie is fortunate, for example, in its College of Fine Arts, and it may capitalize on the extraordinary opportunities for the enjoyment of art and music offered by this city of Pittsburgh.

Of one thing I have become quite convinced: it will be difficult, if not pointless to attempt to recreate a miniature of a traditional liberal arts college as an enclave in the midst of an institute of technology. The humanities must not be set apart. If they are to thrive, they must put down deep roots of their own for an authentic growth in our peculiar environment. What we seek is a style for the institution as a whole rather than the cultivation of a secluded little plot of ground.

This, in turn, implies new forms, demands new insights, and imaginative solutions to new and old problems. I have no thought this evening of discussing details of administration or specific programs—the pros and cons of core curricula or course sequences. But I do want to emphasize the need for a revolutionary attack. My colleague Elting Morison has remarked that we must recognize that “unlike most universities, we are less custodians of what has been said and thought and more creators of the new. What goes on in science and engineering is a restless seeking for the undiscovered or untried. This spirit should be made to invest our work in the humanities.”

At the same time, I must warn against what someone has called the scientization of the humanities. Linguistics, mathematical logic, and the quantitative applications of psychology are important in their own right and, by their very nature, are strongly linked to mathematics, to physics, to the communication sciences. The history and philosophy of science are also eminently germane to our interests. But these are not themselves humanities in the sense in which I speak, nor do they fulfill our need. We may fruitfully draw upon the modern world for examples and stress the society of our day rather than antiquity. But the essence of humanistic studies is rooted in the timeless issues of mankind.

We must always face the question whether realistically these institutes of technology—which, as Dr. DuBridge has said, now belie their limited name—can vie successfully with the colleges and universities of the older liberal tradition in building strong faculties. I think they can, and I am confident that they will.

Of course the arts here won't be the same. They will develop their own form and character. It would be absurd to imagine that all areas of literature, for example, would find scholarly representation among us any more than one might expect to find every specialty of science in a liberal arts college. And yet I think we have much to offer to the scholar and the artist who will come to terms with science. There is a vitality in our institutions. There is a sense of involvement, of relevance to the world around us, to the problems of our time. There is a striking sense of forward movement. And there are students of superb intelligence, eager, extraordinarily receptive, open to ideas. This, I submit, is anything but sterile ground for humanistic studies.

Science and engineering today are the very matrix within which human affairs must be interpreted. As we speculate about the destiny of mankind, we draw upon what science teaches us of the origins of our earth and of the biological nature of life. As we strive to develop that destiny, we draw upon the power and implications of modern technology. As we seek to interpret that destiny, to move mankind forward in understanding and perception, we look with hope to the working partnership of the humanities and science in its broadest sense. As the greatness of the Renaissance lay in the meeting of the scientist and the humanist on common ground, so we must aspire to create together the man of the Twenty-First Century.

THE TREND OF AFFAIRS

In Real Time

Associate Professor Martin Greenberger compared the beginning of a computer service near M.I.T. this fall to Thomas Edison's flip of a switch on September 4, 1882, to light up the Wall Street offices of Drexel, Morgan and Company. This new "utility" is serving small rather than large businesses, but its potentialities for growth, he said, resemble those of the electric power industry in the late 1800's.

The computer being used is a Univac 401 in Technology Square. Its services are being offered to businessmen by the Keydata Corporation organized by Charles W. Adams, '48, and his associates. Manufacturers and wholesalers in Massachusetts, Rhode Island, and Connecticut are now using the machine for such purposes as recording orders, checking credit ratings, and keeping track of inventories. A time-sharing system, somewhat similar to that developed by Project MAC for M.I.T. researchers, enables Keydata's customers to share the capabilities of a single large machine.

Mr. Adams and his associates emphasize that the data processing is done in "real time." Customers have virtually instant access to the machine from consoles in their home offices. Real time data processing enables explorers of space to make measurements and decisions swiftly enough to affect the outcome of various series of events. When a manned spaceship is launched, computers handle up to a million bits of information per minute for the men in charge. Now, Keydata officials say, small businessmen, too, can have the data on which they must base decisions at their fingertips whenever they need it. The new service, its operators contend, will make "management by exception" feasible in small firms and enable them to compete more effectively with corporations large enough to have their own big, high-speed, electronic computers.

Professor Greenberger, who is spending this academic year on leave in Berkeley, flew back to Cambridge for the formal opening of the new service, and pointed out, as he has on other occasions,* the parallel between the birth of such an information utility and that of the electric power industry.

"We shall undoubtedly see other local organizations entering this new kind of business all over the country in the next few years," he said. "The business requires no patents and does not demand an unreasonable amount of capital. You do not have to lay down your own communication lines; there is an established network to serve you. You do not have to build your own hardware; there is a thriving industry of computer manufacturers to equip you. What you do need is a great deal of imagination, enterprise, intelligence, and hard work. And you

need some very capable, highly motivated people, a precious commodity these days."

Governor Volpe of Massachusetts and Chairman James R. Killian, Jr., '26, of the M.I.T. Corporation, were among the others participating in the dedication. So, too, was Dr. M. V. Wilkes, a pioneer in the stored-program computer field, by telephone from his laboratory in Cambridge, England.

The Mysterium Story

An M.I.T.-Air Force receiving station intercepted extraterrestrial radio signals last fall that exhibited unusual regularity. They came from the direction of a hot star called "W3," believed to be in a spiral arm of our galaxy near the arm in which the solar system is located. The signals were found to have been generated and transmitted by a large body of excited radicals.

Science fiction? No, these observations were reported in the British scientific journal *Nature*. The "radicals," however, were chemical rather than political and their excitement was electrical rather than emotional. The "regularity" of the signals, moreover, was in terms of their unusually narrow frequency spectrum and the degree to which they were polarized.

Radio astronomers at the University of California had detected these signals earlier and dubbed the source "mysterium" to emphasize the surprising nature of their observation. The intense, very narrow bandwidth microwave radiation coincided with one of the four frequencies characteristic of the OH (hydroxyl) radical, which was first detected at Lincoln Laboratory's field station on Millstone Hill in 1963.* Early OH observations were confined to *absorption* spectra, however; *emission* lines were not observed until early in 1965, and the California workers refrained from making a positive identification of the W3 emission line, pending more conclusive data. It was, the Californians noted, "the narrowest line so far observed in the interstellar medium."

Acting on this intriguing news, M.I.T. radio astronomers brought the new Haystack Microwave Research Facility to bear on W3 and identified two of the other three spectral (emission) lines characteristic of OH. They also found that almost 40 per cent of the energy in the strongest emission feature was linearly polarized—suggesting the existence of quite unexpected physical conditions or processes in the source.

What is the mechanism responsible for the strong polarization and, indeed, the unusual OH emission itself? And why did it come (as observed), not from the center of the W3 source, but from a small but definite angle to one side of the center? In the best tradition of exploratory research, resolving the "mysterium" mystery disclosed new mysteries.

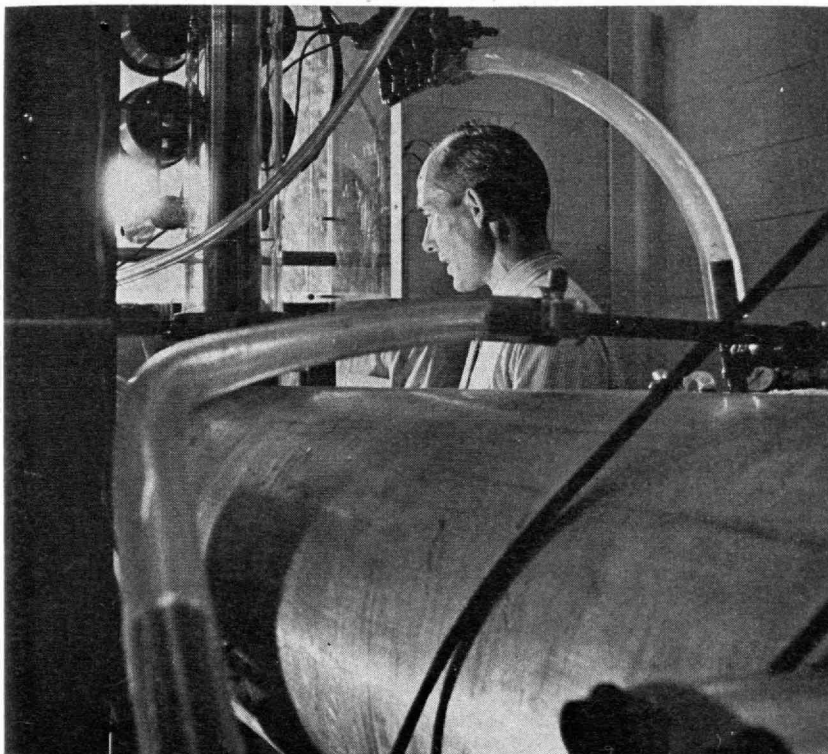
*See "Automation, Management, and the Future," by Martin Greenberger and Howard W. Johnson, *Technology Review*, May 1963, p.17.

**Technology Review*, January 1964, pp. 12-14, "A Veil in Space Reveals Itself."

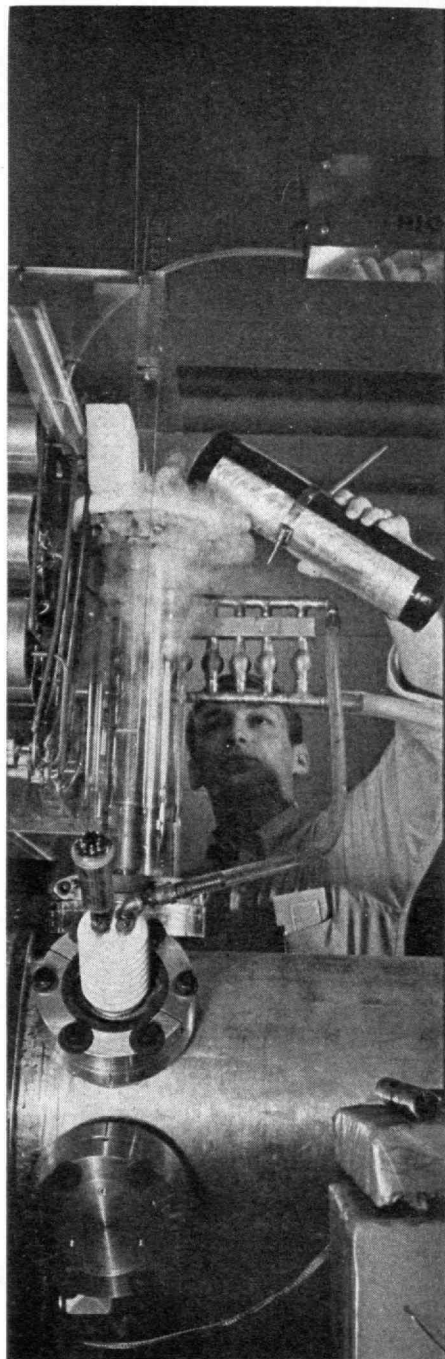
Camera records some views
in new research quarters

High Voltage Lab

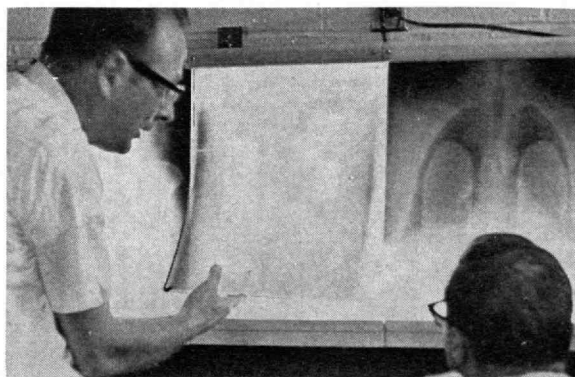
M.I.T.'s studies in high-voltage physics, engineering, and medical radiation are brought together in a new building, on Massachusetts Avenue, that was officially opened last fall.



Dr. Sanborn F. Philp, '49 (above) supervises research with particle beam apparatus which research assistant Richard J. Coddling (right) fills with liquid nitrogen.



Dr. Ferdinand A. Salzman (below) of the Lahey Clinic explains field definition in the 2-Mev therapy program.



A NEW \$5,800,000 laboratory structure, the Uncas A. [23] and Helen F. Whitaker Building (at right), was dedicated at M.I.T. on December 3. It provides expanded and ultra-modern facilities for the Center for Life Sciences, the Department of Biology and the Department of Nutrition and Food Science. Its dedication and the work of its occupants will be featured in The Review next month.



Humanities in German

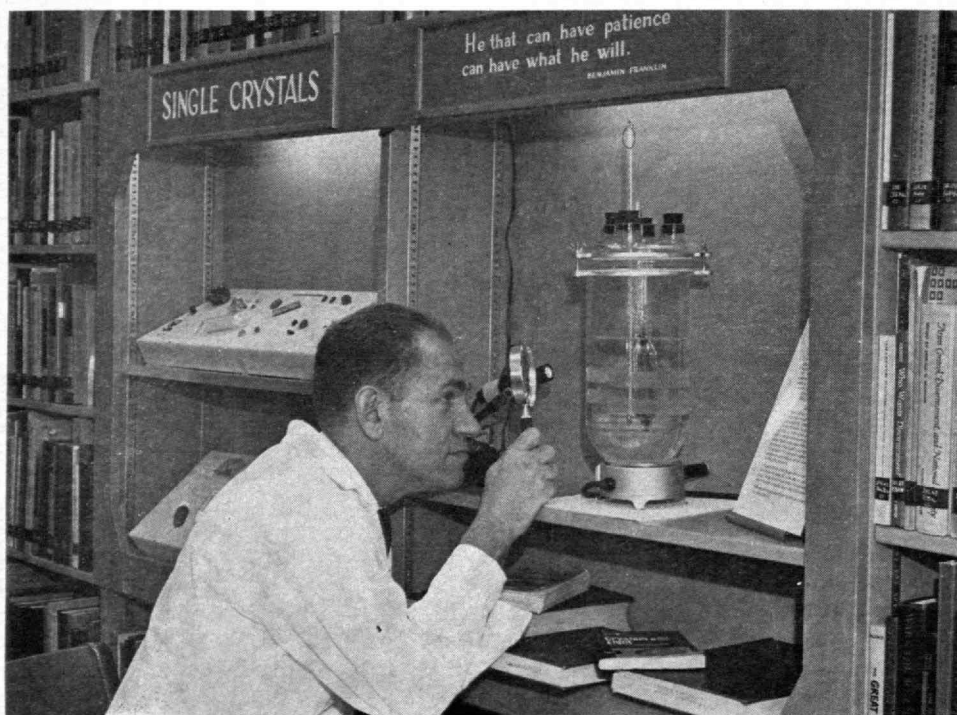
Fifteen M.I.T. students are studying humanities this fall in a class taught in German by the Institute's first full professor of German and humanities. He is Martin Dyck, who was an assistant professor of German and Russian at M.I.T. from 1956 to 1958. German is the most popular of the four foreign languages taught at M.I.T. (the others are French, Russian, and Italian), and more than 50 students sought admission to Professor Dyck's class by taking an examination in German comprehension.

Professor Dyck returned to the Institute as a full professor this fall after teaching for several years at the University of Michigan. Born in Russia, he is a Cana-

dian citizen who received two degrees from the University of Manitoba, and later received his doctorate at the University of Cincinnati. In 1961-1962 he held fellowships from the Guggenheim Foundation and the American Council of Learned Societies.

Professor Dyck has written two books, *Novalis and Mathematics* (1960) and *Die Gedichte Schillers*, which will be published next year. He has also contributed articles to professional journals, and is a member of the American Association of Teachers of German, the History of Science Society, and the Modern Language Association. In addition to the Humanities in German program at M.I.T. he is offering courses in German literature of the Eighteenth and Twentieth Centuries.

(Continued on page 42)



BULK single crystals of iodine were grown in the library at Lincoln Laboratory recently by Sidney Fischler of the Electronic Materials Group. It was done by a new vapor-deposition technique in one of a series of exhibits arranged to highlight the laboratory's research. The crystal grew as the water level dropped by evaporation in a large glass container. Crystals of many other materials were displayed on the next shelf.

THE TWO ACADEMIES

Our society needs the university specialist, and also men of broad knowledge from the liberal arts colleges

By Professor S. Young Tyree, Jr., '42



THROUGH HISTORY WITH J. WESLEY SMITH

"This is the age of specialization. We can't consider a Jack-of-all-trades like Leonardo for an important project like this."

By permission of *The Saturday Review*

In the last decade the rush to assume the status of "university" has resulted in some of the most ludicrous parliamentary maneuverings ever witnessed by man. It has also resulted in many colleges becoming universities in name only, thereby losing both their former stature as good colleges and simultaneously making a joke of the name university.

What is a college? Usually it is modest in size. The students are expected to study several areas of knowledge, known as disciplines. While undergraduates may major in one discipline, they do not explore any single subject in great depth at the expense of breadth of knowledge. They are supposed to be well-rounded and because of the breadth of their learning they might be expected to be the leaders of the next generation. The faculty member of a college is usually a dedicated teacher, "sacrificing" often a desire to study more deeply in his own area of interest in order to spend time in presenting the same to his students. His door is usually open to all who knock.

What is a university? It is generally a larger institution and the variety of courses it offers is great. Often the student has the opportunity to spend rather more time in one subject than is so in the college, although

the opportunity for an equally liberal education is still there. Although the difference between the two kinds of institutions is more apparent at the faculty level, the effect of the difference is now being felt more and more by the student bodies. The faculty member in a university is an expert in a narrow branch of his discipline and well qualified to explore it in great depth. More often than not he may find little time to relate his discipline to the rest of society. Similarly, the serious university student rolls up his sleeves and commits himself wholeheartedly to the intellectual rigor of a sound discipline, going on to graduate school and even further specialization.

Faculties and student bodies at universities have grown by leaps and bounds in recent years. The proliferation of courses and curricula is marvelous to behold in the frenetic race to specialization. As always, the spirit of competition yields various distinctions. These status symbols sometimes take the form of awards for outstanding contributions to a large area, say chemistry.

Now, at a recent national meeting of the American Chemical Society there were about a dozen awards for outstanding contributions to about a dozen sub-kind's

of chemistry. Often the award addresses were given simultaneously in different halls, since those adherents of one award-winner would hardly understand what another award-winner was talking about anyhow. Lest it appear that I tend to belittle these people, let me say that they are magnificent men, each making great strides toward increasing the knowledge and material comforts of man. The more a man expends energy in a small area the more competent he becomes in it and usually the greater will be his contributions to society from that area—and rewarded he should be.

But what is the result in university halls? For one thing, the faculty member surrounds himself with a very few of his kind—graduate students and postdoctoral fellows. Insofar as possible, they commit their energies to producing new knowledge exclusively. A closed-door policy ensues, by which I mean that the faculty member's door stays closed to those, young or old, who seek his opinion on other matters. In particular the door is closed to embryonic scholars such as freshmen and sophomores. Promotions and awards ensue to those who are most successful in this endeavor. A lesser status is accorded those faculty members who occupy large amounts of their time in association with undergraduates.

For example, a professor colleague of mine consistently berates one of his junior assistants for spending one evening per week practicing or playing with the university symphony orchestra, since (he says) the time thus spent would be more profitably spent in the research laboratory.

As an undergraduate I was taught economics for a whole year by an individual who has subsequently become one of the world's leading figures in teaching economics. While this professor explored in great depth several areas of broad economic importance, I learned to my dismay that he was completely unfamiliar with the mundane matter of how banks transfer credits within the banking system of the United States. While this can hardly be construed as a major criticism of the man's worth as a professor, I think it is rather descriptive of the gaps which can be found now in the knowledge and coverage of our highly specialized professors in university structures.

The discovery of new knowledge has become for many the end in itself, regardless of the value of the new knowledge. Whether it be in the realm of history

or chemistry, scientific inquiry has taken on the status of "the search for truth," which indeed it is, in part; and, since "the truth shall make us free," new discoveries, i.e., truth, replace old ideas, which come to be thought of as faults, rather than just incomplete. Thus that which is new is often automatically accorded superior status to that which is old. I am shocked to learn that a Pulitzer Prize in poetry has been awarded to a man who, as a new idea, states that "iambic pentameter is the bane of English poetry" and proposes "once and for all, away with the horse-faced English poem" whose authors are "creatures of the air, feeding on honeydew or absinthe, toying with ethereal milkmaids or hallucinatory drugs." He would substitute "the vulgarity of the word, and a good dose of bad taste in every line."

Perhaps the best way to distinguish between the attitudes of faculty members in our two types of academies is with a personal reference. While an undergraduate at the Massachusetts Institute of Technology I was given an award for excellence in English. This is a facet of my life of which I am a little proud, and I can boast a bit about this award in a College Coffee Snack Bar, but I would do well to hide the fact at a University Coffee Snack Bar (populated in my group with scientists only).

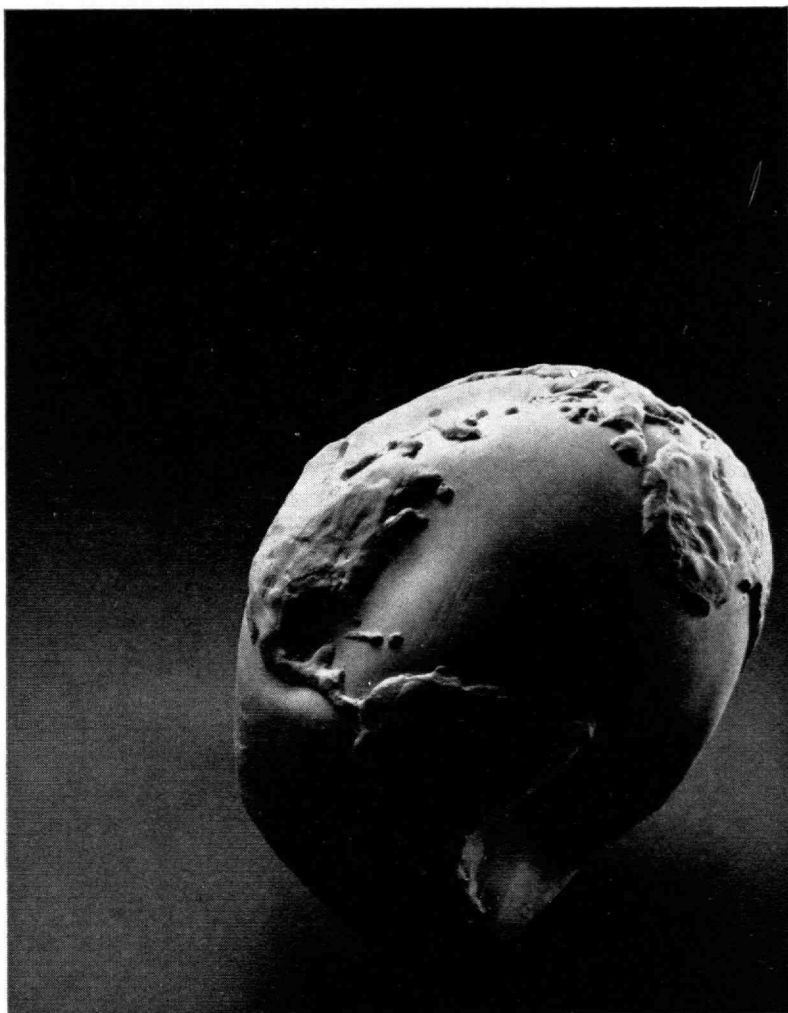
Still another apt way to distinguish between faculty members in the two types of academies is to describe college faculty members as those who are engaged in *service* to the students, and professors in universities as those who consider the students to be their servants.

As our academies have flourished, what has been the effect on our society? With the commitment to produce more educated citizens, each academy seeks the best students and the best faculty. Often the best student is identified by standardized tests administered by a central bureau. Scholarships and admissions are determined by test scores. I think that this has given us better students, but it also has its dangers. To my knowledge, some of the tests administered to students in chemistry, particularly the multiple choice type of test, penalize the student who has depth of understanding. Nevertheless the result has been, on the whole, to produce better students and it has also improved the quality of the academy, because each school wants the best students and the best students want to go to the best schools. Thus each will strive to achieve excellence in order to attract the other.

One interesting outgrowth of this cycle is that many academies equate the best faculty with that which has the best collection of experts. In hiring faculty less attention is paid sometimes to teaching ability than to research potential. In universities, often we see adjunct professors; these men are research scholars associated with nearby nonacademic organizations who are invited to give courses in their specialties. Sometimes they are good teachers, sometimes not, but in any case their commitment to the educational process is marginal.

(Concluded on page 34)

Professor Tyree, who has taught chemistry at the University of North Carolina, is now serving as scientific liaison officer with the London Branch of the Office of Naval Research. In September, 1966, he will join the Department of Chemistry of the College of William and Mary. This article is adapted from an address, "The Academy and the Status Symbol," which he gave last spring before the Phi Beta Kappa chapter at Washington and Lee University.



You can do something about it.

You can join IBM. And help shape a better world.

The key is IBM computers. They're helping medical researchers learn more about cancer and factors associated with it. Helping educators develop new techniques for instructing culturally deprived children. Helping engineers plan flood-prevention programs.

Computers are helping to do a lot of good things for a lot of people. But computers are only tools—they can't think. And that's where you come in. In your hands, man's most daring dreams can become reality—to make a better life for more people.

If that sounds like an exciting prospect, it's because it is. A career with IBM will give you both personal and professional fulfillment.

So before you conquer new worlds, try your hand at reshaping the old one.

For more information about career opportunities with IBM from coast to coast, write to:

Manager of Professional Staffing,
Dept. 615M, IBM Corporate Headquarters,
Armonk, New York 10504.
IBM is an Equal Opportunity Employer.

IBM

®

The Two Academies

(Concluded from page 32)

Moreover, it has actually become stylish to be a professor. More than ever we see mature individuals moving from other jobs into the faculty ranks. A friend of mine tells me he is about ready to seek an academic post. For 20 years he has devoted himself to a very narrow field of chemistry. He now hopes that his record of publication of first-class chemical research will make him a desirable addition to the faculty of an institution of higher learning. He has never taught students.

Lastly let us look at the place our academies have taken in our political organizations. The leaders of our nation look now to experts in the many disciplines to guide them in making major decisions of policy. The best expert is thought of as the man who has been awarded the accolade of his peers in his narrow field of endeavor. To win such an award he must be the ultimate in a specialist. Thus I fear that the advice may be given all too often by a man who sees little but his own interests, and does not see the relative importance of all of the activities in which our government must engage. In short, I fear that he may be guilty of the ultimate in special interests. As a further diluent, he must spend an enormous amount of time traveling to render advice. The more expert he becomes, the more travel he will find necessary. The

more travel he undertakes, the less time he will have either for students or his research work.

However, as if in answer to the foregoing, we can say that our colleges produce well-rounded people who can be expected to be broad enough to see the relation among our variety of needs. And thus I think I would prefer often the judgment of the liberal arts man, if it were not for one fact which I have not touched upon: In the average liberal arts curriculum the student in the academy drinks from many fountains, but usually eschews one—science. The man of breadth today should not—indeed, must not—omit a liberal diet of science from his studies.

Let me commend our universities which produce our badly needed experts—to insure that we have available the detailed knowledge so necessary to the maintenance of our society. Let us insure their health by continuing to offer the medals of their status. Let me also commend our colleges which must produce broadly educated men, who are equally needed and upon whom we would like to depend for interdisciplinary judgments. Thus we must continue also to award status symbols to encourage those who would try to encompass the breadth of society. While I think we can always rely upon human nature to insist that we maintain an adequate supply of magnificent technicians to maintain the affluent society, I think we must be constantly on the alert to maintain and to re-examine our liberal arts academies.

FLETCHER

g r a n i t e

for

Bridges and Buildings

Street and Highway Curbing

Vertical Curb With Sawn

Top & Bottom

ASHLAR VENEER

for

Bridge Facing

Landscape Paving Blocks

Roofing & Sanding Granite Grit

●
Brochure will be mailed on request
●

H. E. FLETCHER CO.

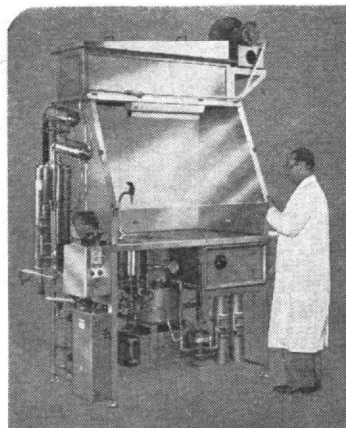
Quarry

WEST CHELMSFORD, MASS.

TEL. CODE 617-251-4031

114 EAST 40TH STREET, NEW YORK, 16, N. Y.

AREA CODE 212-697-4131



BARNSTEAD CLEAN ROOM

DEVELOPED
AND
ENGINEERED
BY

A. White, '26
President

V. C. Smith, '48
Vice-President

Research & Development

N. A. Everett, '48
Manager
Technical Services

S. Beran, '58
Experimental and
Development Engineer

PURE WATER "FIRSTS" COME FROM BARNSTEAD

Barnstead® STILL AND STERILIZER CO.

41 Lanesville Terrace, Boston 31, Mass.

Megalopolitan Urbanity?

(Continued from page 21)

strange and little understood mystique he will not be content to live where he can walk to his work but instead is uneasy with a drive of much less than twenty minutes.

The tensions of the periphery may not be such as to breed surliness, crudeness, and roughness as they are bred by the congestion, the fear, the noise, the confusion, and the dirt of downtown, but cheerful as they may seem, the people of the periphery have accustomed themselves to visual disasters all around them, to an anonymous life and to a new kind of nomadism which one might call the nomadism of technicians whether army officers or space engineers who can move from one city to another into the same intellectual environment, the same physical environment and the same social surroundings so that in a strange way they can be comfortable anywhere, but exhilarated only by their work if that happens to exhilarate them. There is no stoa on Route 128, not even in the Polaroid Corporation.

Even if metropolis were to die, it is perhaps foolish to worry about the decline of creativity since genius will probably find a way not to be suppressed somewhere. Lonesome creativity can, of course, persist in Miró's solitary house on Majorca, and communal may in Jonas Salk's Shangri La in La Jolla, or in the Bell Telephone Laboratories, or in any one of the many manor houses where scholars meet in imitation of Can Grande's castle, usually on foundation grants. But many of these arrangements are artificial, even self-conscious. They are almost certainly divisive between the various types of creative men. It may be a myth that the city once promoted random meetings of the creative and that this was in some way valuable. It did seem to happen in the London of Pepys and Evelyn. I don't know whether or not it was valuable. It seems certain it was fun. There are a few cities even now where such encounters happen now and again. But of course this kind of converse will no longer happen if megalopolis is so inurbane that creative people cannot stand it any longer and flee to some easier home.

You may ask where they are to go? Naturally, if we look very far into the future, we can see that they will have nowhere to go. This is a perplexing future for Americans in particular who have always run to the frontier when things got too uncomfortable at home.

There are still people who dream of this. I have recently read a very interesting, if unconvincing, paper by a man who says that we have mucked up the obviously inhabitable places of the world beyond repair. But there are still the deserts and arctic wastes which we have hitherto regarded either as uninhabitable or as habitable only on the short term. However, modern technology makes it possible to live in these places quite well if only we use enough imagination and expend enough effort; one might even live under the sea à la Cousteau and produce a genuine submarine *Atlantis*. This writer does not go into space but the extrapolation

will no doubt tempt others. He argues that this will be an exciting adventure and that there is a chance to plan the city from the beginning and thus eliminate in one stroke all the previous defects. He does not suggest that the planners may immediately invent new defects. Only a pessimistic historian would suggest that.

This is, of course, a fascinating prospect, much more interesting, for example, than trying to reclaim a present city in a highly habitable natural environment, piece by piece and all too slowly. It is even possible that in the days of arduous life when the people of the new city are facing the common enemy of making the thing work at all, there will be the camaraderie of common purpose that we do not find in the existing city and only sometimes in war. The difficulty, I suppose, is that, as the pressing problems get solved, the citizens will stop being citizens as they largely have in our big cities today, angry at each other or apathetically standing by while a stranger is murdered before their very eyes. One cannot take such proposals seriously. The unpleasant but inescapable fact is that for perhaps 150 million Americans there is nowhere to go to.

In the August 13 issue of *LIFE*, there was a horrifying full-page photograph of the 500,000 people who descended on Zushi Beach, 45 minutes from Tokyo on a hot summer's day (shown on cover). There have been other pictures of this sort, for example of Coney Island, but never one so disturbing. There the poor Japanese lie, flank to flank, with no room for their umbrellas, or beach balls or beer bottles, covering the sand with such an immobile carpet of human flesh as literally to conceal the sand, and invading at least the shallow waters to the same degree. This repellent mound of human ants offers an ominous foretaste of what may be to come. The Japanese, it is said, do practice some population control. Perhaps the catastrophe of Zushi can then be averted for awhile by the redeployment of the Japanese people and the opening of more beaches and better transportation to them. But for the world as a whole, this can only be for awhile unless human intelligence is allowed to triumph over human superstition and human ignorance. Unless humans everywhere learn to control their progenital proclivities, there will not be enough of anything for anybody—or the controls will be the ancient and disagreeable Malthusian ones of famine, plague, and war. This is, of course, the central problem and unless it can be solved anything that might be said about megalopolis is unimportant.

The little more I am going to say is based on the assumption that the world population is brought under control. It would be nice to be able to be optimistic about this but let us say it does come about, and before our urban problems get completely out of hand. Then I want to make the optimistic assertion that megalopolis is not necessarily a denial of metropolis or of urbanity but rather can be a stimulant to both.

With what we now know and can pay for if we want to, we can build neighborhoods of peace for those who wish to live quiet, undisturbed, contemplative, intro-

(Continued on page 36)

Megalopolitan Urbanity?

(Continued from page 35)

verted, or even vegetable lives. We can build neighborhoods where the life is noisy and promiscuous, extroverted and very animal. The choice of neighborhood can be laid open to those who have any desire to choose. There can even be neutral neighborhoods for the neutral. The transitions from neighborhood to neighborhood can be clear, yet gracious. In these dwelling areas violence can be suppressed. It can be safe to walk in a park or ride on a subway. There are cities now where it is safe. There are cities that do have islands of repose. There are cities where the neighborhood life is lively and noisy.

We know how to build centers for research, and centers for medicine and centers for education and might learn how to build centers for the making and enjoyment of the arts, and places where the exotic can be encountered—I mean, of course, the genuinely exotic and not Japanese life or food as interpreted by *House and Garden*.

The very existence of megalopolis makes it statistically possible that each of these aspirations, big and little, simple and complex, can be satisfied at a richer and better level than they now are and in every area of human activity.

It is almost certainly true that it is folly to think any longer of the central city as the host supreme to all these activities. We almost certainly have to think in terms of nodes or nuclei connected by a powerful and imaginative network both of transportation and communications. The present techniques of communications networks are potentially far more powerful than we elect to apply. The components of the transportation system are technically able to be welded now into an efficient and pleasant transportation network without any major inventions except the design of the network; and even here the problem is less one of design than of demanding to have it.

Either type of network involves some controls in the interest of efficiency and comfort of use by each of us and these frighten the tender. The controls I am thinking of, perhaps even computer controls, will not push humans around if humans care enough. There may be no ruder invasion of personal privacy than the telephone but it is not the network or the instrument which is to blame or which has the bad manners; it is the users. There are serious technical deficiencies in television but it seems far easier to correct them than it will be to improve and diversify the contents of television programs. This again is a social and not a technological problem. Even the present crude transportation systems would be much better at least for awhile if each individual were not a scofflaw when it came to parking his own car, each merchant not a Shylock when it came to co-operative activity on a street.

The heart of the successful megalopolis may well be in the transportation system. Here it is perfectly obvious we have not even the semblance of an integrated ar-

rangement, either locally or nationally, but especially not locally. Systems analysis has developed to the point where vastly more efficient networks of transportation using only existing components could be designed but they remain only of academic interest so long as the owners or operators of each component including the private automobile selfishly insist on trying to do more than their apparatus can do well; or so long as tiny communities reserve the right to veto specific proposals for reasons which are hard to fathom; they certainly serve no long-range interest thereby and probably serve the short-range interest only of keeping some people in the local legislatures whom it would be no loss to lose.

Megalopolis, built on existing technology, without any of the extrapolation that will obviously take place, can provide magnificent nuclei for every imaginable human activity, even centers of diversity, all sensibly placed, all easily connected (and pleasantly) over communications and transportation networks. The products or services which are wanted by everybody would, of course, be larger in number and more closely spaced than those which must depend upon larger populations. But the way in which individuals in these larger populations satisfy their individual needs need not be so difficult and unpleasant as to destroy the desire to satisfy them. Some people even now fly from Chicago to Minneapolis to see a Guthrie production. It is time consuming and its expense limits this experience to few. In megalopolis the time can be shorter, the journey more pleasant, the cost less.

It is perfectly obvious that the frustrations of modern life which lead to uncivilized conduct can be eliminated by modern technology if human beings will make it possible. But this may require a new breed of human beings. These humans must be so sensible and so well supplied with reliable information that they can weigh consequences and then make rational rather than whimsical, communal rather than self-centered, decisions. We have really not come very far along this road in several thousand years, if indeed we have come anywhere.

The easy way is the way we go now. We can continue to supply what seems to be an average taste in increasing quantities and with greater and greater efficiency but with the corollary of stamping out the indulgence of individual idiosyncratic taste even for the affluent.

This mass taste may not even be a positive thing. Perhaps if you want to sell 10 million cans of something called onion soup you must start by leaving out the onions. The purpose is not to have anyone like your soup very much but to be sure that no one dislikes it enough not to buy it. It is wiser to alienate the few who like onions in a firm way than it is to alienate the many who do not like them at all or are indifferent to them or could appreciate them in a tepid way if they were sufficiently homogenized. In a good megalopolis there may well be 10 million innocuous cans but somewhere within visiting distance there must be a stout cauldron of Gratinée Dauphinoise.

(Continued on page 38)



This photograph was taken on Memorial Drive in Cambridge, just minutes away from a Harvard Trust office. There's one just minutes away from you, too.

Stay on our side, Mr. Pearson

Think you could get better help with a commercial loan on the other side of the river, Mr. Pearson? Not with Harvard Trust on this side. We've been loaning money to businessmen for over 100 years. We have specialists in real estate, construction, and other bank services who can offer you all sorts of personal, able assistance. There is no need to go any farther than you have to. And the farthest you have to go is to your nearest office of Harvard Trust. There is one very close to where you are right now. Ask for the office manager. He would like to help you personally.



The shortest path to
person-to-person banking
**YOUR HARVARD TRUST
FULL-SERVICE OFFICE**

HARVARD TRUST COMPANY
Offices in Cambridge, Arlington, Belmont, Concord and Littleton

Member F.D.I.C. • TOTAL ASSETS IN EXCESS OF \$140 MILLION

Megalopolitan Urbanity?

(Continued from page 36)

Without this stout cauldron, the average megalopolis pursued to its logical conclusion does become an absurdity, egalitarian, parochial, a morass of mediocrity in which there is no spot on which one would prefer to settle rather than on another. For such a community, full of its soup without onions, all the reasons for megalopolis disappear, but it is self-perpetuating. And its conquest is supreme when those who want to escape to Majorca find that there is no more Majorca to run to.

Another plausible and easy alternative is to manufacture larger and larger and more powerful authorities. These unhappily develop attitudes too, such as, "What's good for the Triborough Authority had damn well better be good for the people of New York." The ultimate end of this is, of course, that each larger local effort fails and the appeal then goes to Washington. On another front, it is an interesting speculation to wonder how much of the United States can be a disaster area in any given moment. But on the front of urban affairs I find it hard to believe that Federal authority can accomplish much where the local power is weak and the local will vacillating. We cannot achieve metropolitan and urbane megalopolises simply by passing bills through the Congress or by listening to television lectures by the President of the United States. I do not mean that the new cabinet post was not overdue. Our public housing for example is vastly inferior to that of Finland, Scandinavia, Germany, England, Switzerland or Holland. But the Federal government cannot keep those who will not keep themselves.

This leaves us with no pleasant choice except to find ways by which individuals, and a very large number of them, are persistently determined, on the one hand, to be individual, and on the other to develop communities in which others can exercise their individuality too. The human race has never quite seemed to manage it for long, but now and again it has managed it briefly and well enough so that we can continue to hope. And it is very hard when one gets beyond the generalization to find ways by which these same individuals can act responsibly in matters where *collective* action is essential—the central problem of *megalopolis*. At one level this is because it is easier to tolerate someone else's idiosyncrasies than it is to compromise an iota of one's own.

But there is a more important and perhaps a more possible level. It is certainly distressing for a man who has spent a long life mostly on the fringes of the humanities to feel impelled to admit that humans have not really grown to match their inventions, their machines if you like, that in fact what is technologically possible for the development of a rich and civilized, a creative and an urbane life in megalopolis has not even been marginally realized. It is a sad conclusion because it points to an end where we spend our lives on metaphorical Zushi beaches. It will not be the fault of the inventors and the makers of technology, or at least only partly their fault, but that does not get us very far.

Still there may be something to be said here. It is fairly easy for individuals who are engaged in some exciting personal activity of which research is only one example, to find so much excitement in what they are doing that they can overlook the rest of the difficulties of their lives and center their being on the exciting frontiers where all their real life is lived. This will permit them to stand a considerable amount of the friction and apathy of megalopolis, to buy their way out of some of the rest, and to ignore the fact that many, indeed most of their fellow citizens have no such recourse, cannot achieve the experience vicariously and are sinking into the apathetic megalopolis which is destructive of both urbanity and creativity. How can they better do their duty? By participating, of course, in a more vigorous way in attacking the local problem. I do not mean necessarily engaging in the hazards of elective office. But I do mean working on task-forces, even self-appointed task-forces, often unrewarded in money, often rewarded only by vituperation in public.

It is fairly easy to give advice on remote problems in Washington; it is more dangerous and unpleasant to try to achieve something locally. Few duck Washington when it calls; most duck their community problem when it calls, especially the urban region when it calls. And it does not often call. But some of the calls from Washington have been instigated in rooms far away from government; the same thing is possible at the local level.

Great universities may have a positive obligation to work on the problems of their own cities and not to stand aloof through fear of contamination, criticism, or reprisal. They may have a positive obligation to *seek* the opportunity to do the work, to be aggressive about the search, relentless about disseminating the results. It is about time the urban boats were rocked. Their faculties may have the responsibility to treat their urban problems as aggressively as they do those of Viet Nam. Suburbanites may have to leave the safe harbors of local school boards, say in Winnetka, Ill., for the turbulent seas of black Chicago. To do this, they may even have to stand against the continued balkanization of metropolitan government, to be as brave in contesting their own suburban *mores* as Mayor Collins of Boston was in contesting the Democratic party's tax ethos in Massachusetts. All this will be a lot more disagreeable than calculating a program of growth for Sierra Leone or attending an alumni seminar in Cambridge.

Large marginal gains could be expected in view of the low level of most urban thinking—how could a man like Robert Moses, for example, ever have come to have the power he has if he had been consistently opposed by organized facts and not merely by emotional architects and do-gooders? But Moses, we must remember, is at least not inert. Trying to work at this level will be time-consuming, patience-abrading, and costly in the time it demands from each who can thereby do less in his own exciting area. These exciting areas are completely irrelevant, however, if the human uses are silly.

Everyone who had war experience with the Armed Services knows that the work was not finished with the innovation, that exciting new inventions cannot be dumped in the laps of unsympathetic consumers with the expectation that anything will happen. The invention has to be made, it has to be sold, it has to be serviced at least until it is understood. The selling has to be not once but dozens of times and there has to be incessant prodding and needling. All this is part of the innovator's burden. If he lays down the disagreeable part of it, then he condemns himself and his own family to the consequences, quite as much as he condemns others about whom he may care less.

Sermons and explanations from the ivory tower are not enough; theories of human conduct are not enough; noble mechanisms of great potentials are not enough. But when people descend from the ivory tower into the turbulent streets, all too many find themselves behaving like the crowd men they have hitherto justifiably despised. It is the risk St. Augustine ran when he uncovered his eyes, looked upon the battles in the arena and realized that he enjoyed them. We are to believe that he conquered himself. We have to believe that we may be capable of no less.

Long ago John Greenleaf Whittier was worried about the increasing degradation of farm life as he saw it, and wrote:

"Our yeoman should be equal to his home
Set in the fair, green valleys, purple-walled,
A man to match his mountains, not to creep
Dwarfed and debased below them."

It does not require much of a paraphrase of the last two lines:

"A man to match his machines, not to creep
Dwarfed and debased below them."

If we do not match our machines, it will not be their fault. But this matching is not to be achieved by conciliation and the great consensus. In *The Accidental Century*, Michael Harrington suggests that Western man will either choose a new society or a new society will choose and abolish him. He believes we must radically overhaul the consensus or the rhetoric we have been living by.

There is no area of our existence where this seems more to be true than in the question of whether megalopolis shall be metropolitan and urban or whether it shall become a universal sands of Zushi.

Optimal Control Theory

Arthur Earl Bryson, Jr., will discuss "Applications of Optimal Control Theory in Aerospace Engineering" in this year's Minta Martin lecture at 8 P.M. on March 3 at Kresge Auditorium. Dr. Bryson is McKay Professor at Harvard and currently the Jerome C. Hunsaker Professor of Aeronautical Engineering at M.I.T. He is noted for his work in rocket trajectory optimization and the application of computers to the optimization of flight vehicle control systems. His lecture will be open to all members of the M.I.T. community.

- Rugged Electrical Wiring Devices
(outlets, switches, plates, caps and connectors)
- Cold Formed Machine Screws and Special Fasteners
- Custom Molded Plastic Parts
- Outdoor Lighting Fixtures
- Mechanical Holding Devices



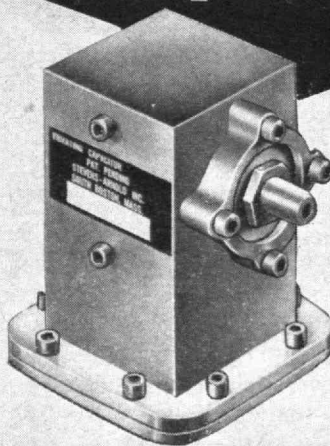
HARVEY

HUBBELL

INCORPORATED

Bridgeport, Connecticut

New Stability Specs vibrating capacitors



Difficult Electrometers made easy.

Drift with constant temperature 0.05 to 0.1 mv/24 hours noncumulative.

Models for AC drive or oscillator drive.

Particularly suited for long term stability.



Write for Catalog 523 G

**STEVENS
INCORPORATED
ARNOLD**

QUALITY SINCE 1943

7 ELKINS ST., SOUTH BOSTON 27, MASS.

S/A-36-1/4

25 Years Ago

Writing under the title, "What's Happened to Television?" in *The Review* for January, 1941, Donald G. Fink, '33, began:

"The classic story about committees relates to Mrs. Charles F. Kettering who, seeing Lindbergh's plane at the Smithsonian Institution, turned to Mr. Kettering and said, 'To think that he did it all alone!' To which remark her experienced husband replied, 'It would have been a great deal more remarkable, my dear, if he had done it with a committee.' Committees are so notoriously cumbersome when called upon to settle controversial issues that the 'Lone-Eagle' approach has an almost irresistible appeal. A committee, like a democracy, usually arrives at the best compromise, given time. But when time is an element, the results may be nil.

"The story of the National Television System Committee is therefore one of the most remarkable in the recent history of technological standardization. This committee, instituted late in July and organized the following month, is composed of no fewer than 168 members and alternates who in less than four months devoted 3,000 man-hours to committee meetings alone and spent an additional 3,000 man-hours in travel and preparation of reports.

"The proceedings of the meetings—minutes and supporting documents—run well over a thousand pages. A quarter of a million sheets of paper have been consumed in circulating this material to the members of the committee, at a cost of over \$6,000. This accomplishment has been brought to pass by several circumstances: Every man on the committee has a vital interest in the outcome of the deliberations, and so has the company for which he works; the committee was working against a deadline 'suggested' by the Federal Communications Commission; and the organization of the committee was very skillfully contrived to avoid wasted time and effort.

"The result is that all the standards for commercial television broadcasting, excepting a few minor points, have been examined and re-examined; final recommendations, made by a record vote, are ready for presentation to the F.C.C., complete with minority reports. The government agency will hear a progress report from the committee on January 27. Thereafter, barring unforeseen contingencies, the F.C.C. will promulgate the recommended standards as official for the United States, and television will be off again in full stride. . . ."

■ Announcement was made of a grant of \$10,000 by the Charles Hayden Foundation to establish a dental clinic in the Institute's Homberg Infirmary.

50 Years Ago

On January 1, 1916, Charles A. Stone, '88, took office as the 23d President of the Alumni Association, with Joseph H. Knight, '96, as Vice-president. Walter Humphreys, '97, was re-elected as Secretary, in which portfolio he served from 1907 to 1923.

■ On January 8, at the Copley-Plaza Hotel, there took place the 41st Annual Banquet of the Alumni Association, with an attendance of approximately 500.

Influenced by the European War then in its second year, President Richard C. Maclaurin referred to the fact that the Institute had from the beginning given instruction in military science. "Technology does not exist to train men to fight," he continued, "but to train them to apply scientific methods to the practical arts of peaceful life. The inclusion of a modicum of military training in [our] curriculum recalls the important truth that some of the fundamental principles of military training are essential to the success of *civil* enterprises under the conditions of modern life.

"If we are to cope successfully with the great problems of modern industry we must mobilize our forces

scientifically as do the effective armies, and we must secure real team play between all the elements that are struggling together on the same side. It may take this country a long time to learn this lesson, but it must learn it ultimately or go down in the economic struggle.

"Science must rule in peace as well as in war, and this being true, the country as a whole will do well to watch carefully its schools of applied science, to insist that they are adequately equipped for this great task . . ."

100 Years Ago

During January, 1866, the Finance Committee of the "Government," pursuant to instructions given it in December, diligently explored "ways and means" to cope with mounting liabilities being incurred in connection with the construction of the new Institute Building at 491 Boylston Street, Boston. These liabilities up to December 16 totaled \$182,012.49, over \$25,000 more than had been estimated.

On January 3, the Finance Committee appointed Edward S. Philbrick as its "expert" to investigate the situation in detail; and on January 30, he estimated what would be needed "to finish the floors and the rooms in the upper floor for use of the School, without heating apparatus"—all totaling \$219,356.68. The Finance Committee then:

"Voted . . . that a vote be passed by the Government authorizing the completion of the lower two stories, and of one or more upper rooms for the Drawing Department of the School, and the plastering of the remainder of the Building excepting the large Hall; and that all other work be suspended.

"Voted . . . to advise the Government to direct that such work as is recommended to be done shall be finished in the most economical manner, and in the plainest style consistent with good taste."

As recalled for Review readers by the late H. E. Lobdell, '17.

[N]OTABLE NEW BOOKS

By and About M.I.T. Men

Recent books that may be of interest to readers of The Review include:

Analysis of Framed Structures, by James M. Gere and William Weaver, Jr., '52 (The University Series in Civil Engineering and Applied Mechanics, D. Van Nostrand Company, Inc., \$13.75).

Deformation and Fracture at Elevated Temperatures, papers on high-temperature metallurgy, edited by Nicholas J. Grant, '44, Professor of Metallurgy, M.I.T., and Arthur W. Mullendore, '53, former Assistant Professor of Metallurgy, M.I.T. (The M.I.T. Press, \$6).

A History of the General Radio Company, by Arthur E. Thiessen (Published by the company).

Hoffa and the Teamsters, A Study of Union Power, by Ralph C. James, former Assistant Professor of Economics at M.I.T., and Estelle D. James, '61 (D. Van Nostrand Company, \$6.95).

Introduction to the Principles of Mechanics, by Walter Hauser, '50 (Addison-Wesley Publishing Company, Inc., \$11.75).

Mr. Faraday's Formula, a novel by David O. Woodbury, '21 (The Devin-Adair Company, \$3.95).

Nationalism and Communism in Chile, by Ernst Halperin, research associate, M.I.T. Center for International Studies (The M.I.T. Press, \$7.50).

Patent Interference Practice, by Hugo M. Wikstrom, '50 (Clark Boardman Company, Ltd., New York).

The Social History of an Indonesian Town, by Clifford Geertz (The M.I.T. Press, \$7.50).

The Sources of Increased Efficiency: A Study of du Pont Rayon Plants, by Samuel Hollander (The M.I.T. Press, \$10).

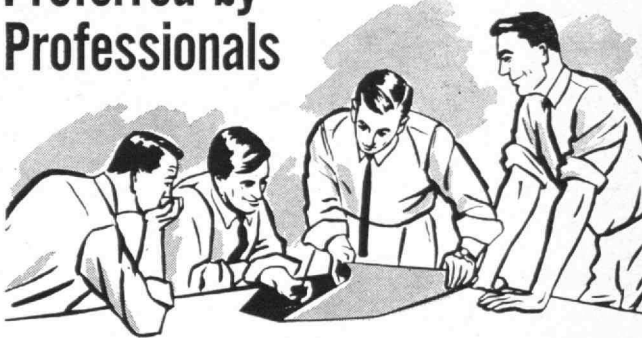
Steelmaking: The Chipman Conference, proceedings of the conference on the physical chemistry and technology of steelmaking held at M.I.T.'s Endicott House in June, 1962, to commemorate the career of John Chipman, former Head of the M.I.T. Department of Metallurgy, John F. Elliott, '49, M.I.T. Professor of

Metallurgy, editor, and T. R. Meadowcroft, former M.I.T. Assistant Professor of Metallurgy, assistant editor (The M.I.T. Press, \$20).

The Turkish Political Elite, by Frederick W. Frey, Associate Professor of Political Science, M.I.T. (The M.I.T. Press, \$12.50).

World Revolutionary Elites, Studies in Coercive Ideological Movements, edited by Harold D. Lasswell and Daniel Lerner, Professor of Sociology, M.I.T. (The M.I.T. Press, \$15).

Preferred by Professionals



K \neq Σ INSTRUMENTS and EQUIPMENT

Precision built for accuracy and durability.
Authorized Distributors for K + E.

• RENTALS and REPAIRS • TRANSITS • LEVELS

*New England's
Most Modern Reproduction Facilities*

Tel. 267-2700

B.L. MAKEPEACE INC.
1266 Boylston St., Boston, Mass. 02215

ELECTRICAL CONTRACTORS

TO THE NATION SINCE 1895

LORD

ELECTRIC COMPANY, INC.

BOSTON • NEW YORK

PITTSBURGH • PORTLAND, ORE.

LOS ANGELES • SAN JUAN, P. R.

For Oceanographic Research

A 50-foot boat, the *R. R. Shrock*, went into service in November as the first M.I.T. oceanographic vessel. Built by the U.S. Navy 10 years ago, it has been loaned to the Department of Geology and Geophysics and outfitted in a Chelsea boatyard for research, chiefly within the area of Massachusetts Bay. It is named for Professor Robert R. Shrock, a member of the M.I.T. Faculty since 1937 and Head of the Department for 16 years, who played a key role in development of oceanographic activity at the Institute.

Oceanographic research by M.I.T. professors and students is often done in co-operation with the Woods Hole Oceanographic Institution, particularly when deep-sea work is involved. The new vessel will be used for studies in local waters from nearby facilities.

Captain Harold Payson, Jr., '63, who served in the Navy from 1927 to 1961, has become manager of marine operations. He received degrees from Annapolis and Oxford University and, after retiring from the Navy, earned a master's degree in oceanography at M.I.T.

Under the supervision of Associate Professor Ely Mencher, '38, a group of graduate students will use the boat to study sedimentation in Boston Harbor, while others working closely with Professors Dayton E. Carritt and William S. von Arx, '55, will study the characteristics and composition of the ocean contiguous to the coast. Harold E. Edgerton, '27, Professor of Electrical Measurements, will use it for coastal surveys of the ocean bottom with recently developed sonar devices.

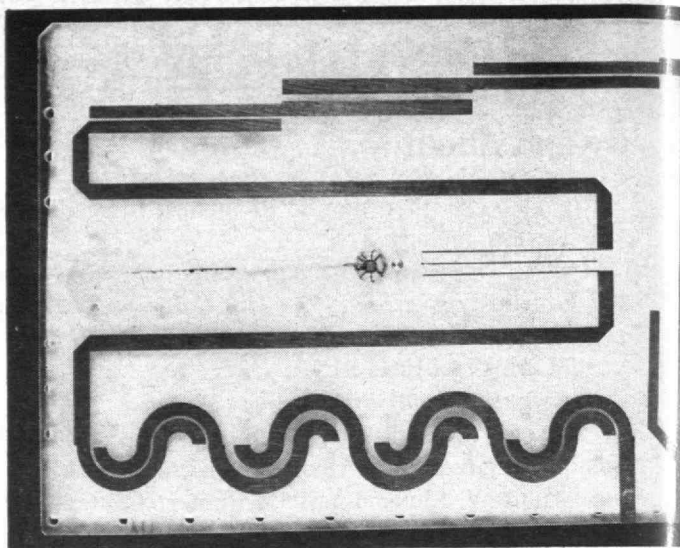
The *Shrock* was formerly an underwater ordnance research boat. It has radar, ship-to-shore radio, and a fathometer, and has been equipped with a hydraulic A-frame lift on the afterdeck to be used in lowering buoys and other gear into the water and for launching a small boat, a Boston Whaler. It has a 350-horsepower diesel engine and two five-kilowatt generators. It has been equipped with four bunks and a galley so that it can be used for overnight cruising.

Faster Typesetting

Max V. Mathews, '52, Director of the Behavioral Research Laboratory at Bell Laboratories, is credited with development of a system capable of generating and setting any style of type, in any language, on a cathode-ray tube. In an experimental set-up that includes a digital logic network and a camera, characters are formed on the tube face by firing an electron beam through stencils.

Bell Laboratories reports that the method has the potential of generating and setting several thousand characters a second—much faster than any other way of setting type—with a quality comparable to that of book type.

Line drawings, mathematical equations, musical scores, and graphs can be produced in addition to a great variety of typefaces. Images or letters displayed on the screen are photographed, and printing plates are made by conventional techniques.



Abstract Art?

The photo above, taken at Lincoln Laboratory, shows part of a stripline upconverter used in LES satellites to generate an output of 914 Mcps from a broadband input signal at 60 Mcps and pump power supplied at 854 Mcps. The stepped structure at the top and the undulating structure at the bottom are filters. Upconversion is performed by a tiny varactor diode in the center, to the right of a toroid coil that tunes it to resonate at the input frequency. The three fine parallel lines act as a quarter-wavelength transformer.

GEARS

**Designed and
Manufactured to meet
YOUR**

Production Requirements

•
Custom Gears Exclusively
•

DIEFENDORF

GEAR CORPORATION

SYRACUSE 1, N. Y.

Goldfish Brains

Does one fish eye know what the other has seen? Generally, it does, but research at M.I.T. shows that in goldfish, at least, information about color is relayed from one eye to the other more readily than information about patterns. Thus, there appear to be two processes of visual coding in the neural pathways that connect the two halves of the fish's brain.

Experimenters have tested such interocular transfer in monkeys, cats, carp, chickens, and the octopus, according to David J. Ingle, formerly of the M.I.T. Department of Psychology. In the case of the mammals, he says, there are questions whether their superior ability in transferring discrimination really reflects their greater ease in learning, and whether it depends also on the difficulty of a problem. Studies of the relatively simple goldfish brain avoid such experimental complications and yet, he adds, they can help in understanding how the brains of higher species work.

In his experiment, reported last fall in *Science*, Dr. Ingle used small white squares that bore either stripes or a random "chip" pattern in red or green. First he trained several large goldfish—on one eye—to avoid a certain visual cue (for example, red and white stripes), then he showed conflicting patterns (green and white stripes, or green-random) to the untrained eye. All of the fish thus tested responded "unambiguously" to color rather than pattern when using the untrained eye. Although the fishes' behavior indicated different coding processes in the commissural system, final proof will require anatomical or electrophysiological experiments.



**Men
you
can
depend
on**



FRANK DWYER

Manager, Special Services — 15 Years

We are proud of our long-term relationship with both our customers and our own people. The Brown-Wales service emblem marking 10, 20, and 30-year milestones in the careers of our Administrative, Sales, and Service personnel is an expression of this pride. It is a symbol of their proven capacity for loyalty and service in the past . . . and our pledge to its continuance in the years ahead.

These men who wear the Brown-Wales service emblem are men who really know Steel. They are men who are vitally concerned with you as a customer and a friend to whom they can provide the ultimate in cooperation and service. Experience has taught them the Steel requirements of many businesses.

Call or write the Brown-Wales Steel Service Center nearest you. Men that you can depend on are at your service.



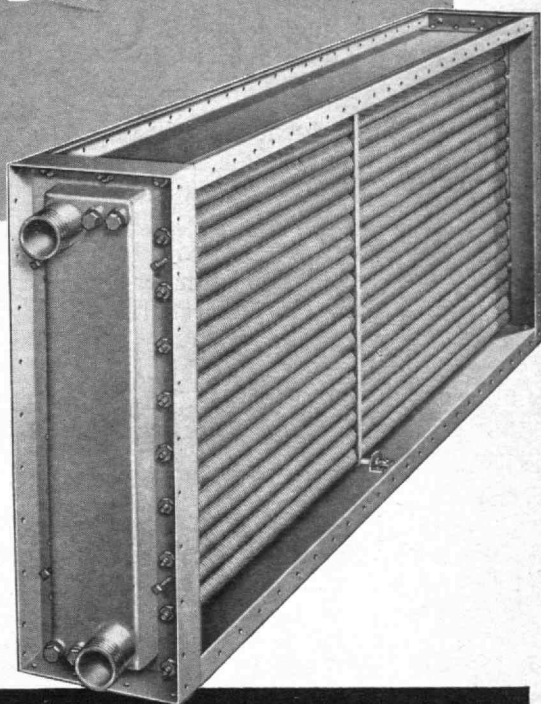
BROWN-WALES steel

3 CONVENIENTLY LOCATED STEEL SERVICE CENTERS

165 Rindge Ave. Ext., Cambridge, Mass. 02140
Worcester, Mass. 01501 Auburn Industrial Center
Auburn, Maine 04210

864-4300
757-7451
784-5706

BIG CAPACITY IN *Small* SPACE



AEROFIN *Smooth-Fin* Heating and Cooling Coils

High ratio of surface area
to face area

High air velocities without excessive
friction or turbulence

Write for Bulletin S-55

AEROFIN
CORPORATION

101 Greenway Ave., Syracuse 3, N. Y.

Aerofin is sold only by manufacturers of fan
system apparatus. List on request.

ENGINEERING OFFICES IN PRINCIPAL CITIES

Revolution in Teaching Stressed by Dr. Killian

Support for development of fresh new curricula for the nation's schools is an example of how federal aid can be used to increase and not decrease the freedom of local schools, James R. Killian, Jr., '26, told M.I.T. Alumni at a combined meeting of the M.I.T. Clubs of Hartford, Conn., and Springfield, Mass., in November.

Dr. Killian said the "new math" the "new chemistry," and the "new physics," about which parents have heard so much in recent years, are part of a revolution in the art of teaching. "Curriculum improvement," he continued, "has provided a convincing example of how federal funds can be used to make a major advance in the quality of education without the government's encroaching seriously, if at all, on the independence of school systems and institutions or without regimenting

instruction. The new physics, biology, mathematics, chemistry, and so on, have increased the number of choices available to school systems."

Educational Services, Inc., of Watertown, Mass., is the prototype of national educational laboratories called for under the Elementary and Secondary Education Act recently passed by Congress, Dr. Killian said.

Support for the ESI work has been both public and private, but the major funds have come from the federal government, primarily from the National Science Foundation. This pattern of support brings together pre-college teachers and university scholars to work out revolutionary new curricula.

Advances made thus far, Dr. Killian said, have, in part, been "mothered by necessity."

"We are faced with enrollments which are growing faster than the

supply of trained teachers," he said. "Through our schools we are reaching out to aid the disadvantaged, and this requires great teaching skill and the best teaching materials if these youngsters are to be helped. We are experiencing such a torrent of new knowledge that we must constantly separate out that part which is essential and fundamental.

"As a result of new curricula and better teaching, many high schools have advanced their programs at least a year and there are many high schools—although not enough—which are bringing pressure on colleges to upgrade and modernize their curricula."

Dr. Killian urged innovation and experimentation in curricula from kindergarten through college.

The combined meeting of Hartford and Springfield M.I.T. clubs was the first such meeting in the Connecticut River Valley area since 1960 when Alumni from the region met at New Haven, Conn., to honor President Julius A. Stratton, '23. The president of the Springfield club is Lloyd Gilson, '55, and William A. Bayer, '58, heads the Hartford club.

NORCROSS Process Control VISCOMETERS

with the Falling Piston ▶

*Principle proven by 20 years
experience with Newtonian
and Non-Newtonian liquids*

MEASURING ELEMENTS

for open or closed tanks and
for pipeline applications

RECEIVERS

for indicating or Recording
with or without Controls or Alarms
Electric or Pneumatic Control

COMPLETE VISCOSITY CONTROL SYSTEMS

NORCROSS VISCOMETER Applications:

Solvent Control - Polymerization Processes
Starch Processes - Blending Processes

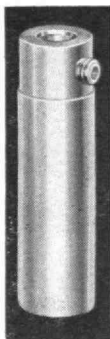
**DIRECT TANK MEASUREMENT—EASY TO INSTALL & USE
RUGGED • CORROSION & EXPLOSION PROOF • ACCURATE**

Austin S. Norcross, '29 Frederick J. Elmert, '32 Robert A. Norcross, '51
for full details write Dept. A-69

NORCROSS CORPORATION

NEWTON 58, MASSACHUSETTS

Representatives in Principal Cities and Foreign Countries



albert

PIPE • VALVES • FITTINGS

Steel / Wrought Iron / Aluminum
Plastic / Stainless / Alloy

PIPE FABRICATION From one coded
pressure vessel to complete power plant pre-fabricated piping.

SPEED-LAY Economical pipe system for oil-
gathering, dewatering and chemical processing lines.

PIPE PILING & ACCESSORIES

Composite pile extensions. Non-field welding H-Beam points
and sleeves. Steel-sheet piling.

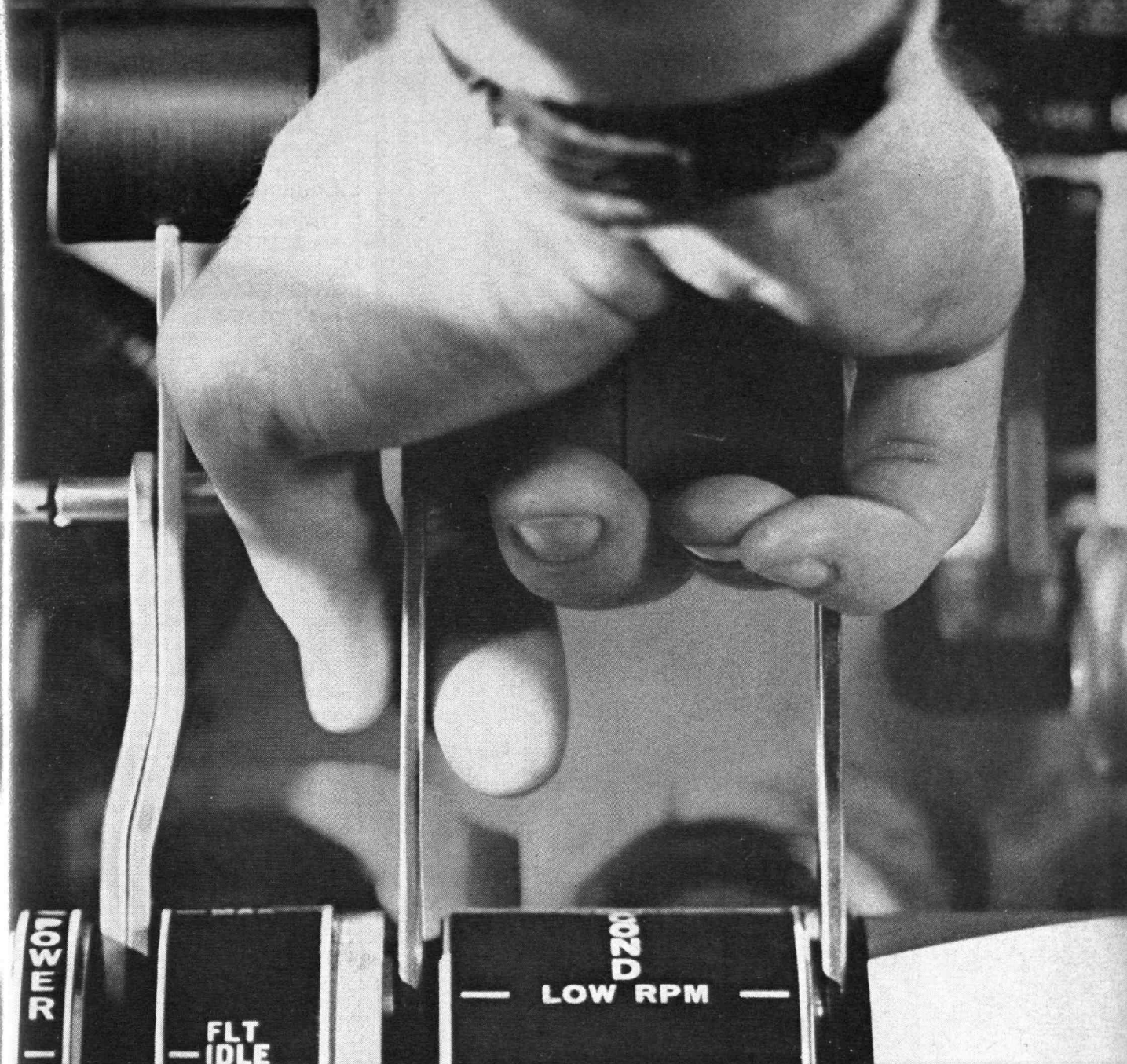


WRITE FOR FREE BROCHURE:

ALBERT PIPE SUPPLY CO., INC.

101 VARICK AVE., BROOKLYN, N. Y. 11237
Telephone: 212 HYacinth 7-4900

S.G. ALBERT '29 • A.E. ALBERT '56



You'll get more than just power when your business airplane has **AiResearch turboprop engines**

The compact, lightweight AiResearch TPE-331 turboprop engine delivers 605 horsepower—the kind of power modern business flying demands. With the AiResearch TPE-331 you get instant response for maximum maneuverability. In addition, you get power for short takeoffs, fast climbing, and high-speed cruising, plus immediate reverse-thrust power for reducing rollout when landing on small fields.

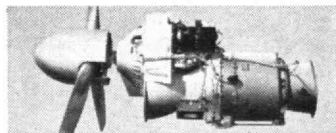
But power is only part of the story.

The TPE-331 also costs less to install, less to operate, less to maintain. What's more, it gives you the inherent reliability of Garrett's uncomplicated fixed-shaft engine design. And, of course, you get equally reliable Garrett worldwide field service, too.

The TPE-331 is now flying on the new Aero Commander Turbo Commander, Mooney-

Mitsubishi MU-2, Fairchild Hiller Turbo-Porter, and Beech 18 conversion by Volpar.

For more details, write: AiResearch Manufacturing Company, 402 S. 36th St., Phoenix, Arizona 85034.



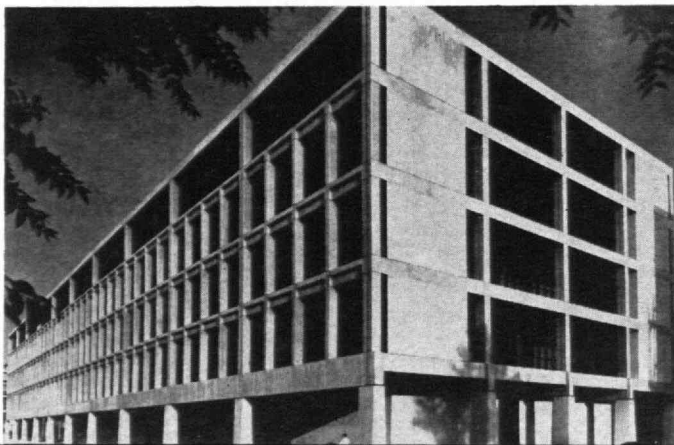
GARRETT **AIRESEARCH**
TPE-331
TURBOPROP

These M.I.T. buildings were painted by BERGGREN



Uncas A. and Helen F. Whitaker Building for the
M.I.T. Center for Life Sciences

Vannevar Bush Building for the Center for Materials
Science and Engineering



The John A. Berggren Company, Inc. has been painting college, industrial, government, municipal, commercial and residential buildings from Maine to Florida since 1929. A unique Berggren affiliate pioneered and developed special applications for roofing. Another division was recently organized for the design and building of highly specialized structures. A brochure on Berggren's qualifications is available upon request.

JOHN A. BERGGREN COMPANY, INC.

Executive Offices: 6 School Street, Milton, Massachusetts 02187

Sales Office: 1029 Vermont Avenue, N.W. Washington, D.C.

Affiliate Companies:

Protective Coatings of New England, Inc. and
Special Structures Division

FEEDBACK

Comments on Seminars

I thoroughly enjoyed participating in the M.I.T. Alumni Seminar and regard it as a privilege to have been asked. I have seldom talked to as responsive an audience. The occasion was run with skill and dispatch and I am indeed obliged for having been invited to take part.

HUDSON HOAGLAND, '24
Shrewsbury, Mass.

It was a perfect weekend of exciting intellectual stimulation. We hope the Alumni Association will continue this extremely worth-while activity. Perhaps an interesting theme for the symposium next year might be one of direction—what should man be accomplishing now to assure survival and continued progress of future generations.

E. A. PICARDI, '44
Chicago, Ill.

Mrs. Mooney and I felt that this year's Seminar was electrifying, and we wish to express our profound appreciation to you and your committee for their efforts in making it such a memorable success. When we departed, we felt exhilarated with a renewed interest in keeping current with the many thought-provoking subjects discussed.

RICHARD S. MOONEY, '47
Bernardsville, N.J.

The Seminar clarified some of my hazy ideas to a clearer understanding of things as they are. It provoked me into conjecture and concern about the future and tantalized me about Man's role concerning Man.

One of the strange reactions which I think is prevalent after such a meeting is a groping for the ultimate answer to some of the most profound questions confronting mankind and we feel inept because we cannot answer them.

Certainly one of the most difficult problems we face is to relate

scientific endeavor to the most needy requirements of humanity; and to do this clearly will require greater dialogue; greater interdisciplinary movement—more of Professor Wiener's cybernetics—than the groups involved thus far are exercising.

Maybe those of us in the position of relatively nonscientific citizens can add our voices to this presently weak dialogue and accelerate it somewhat.

WILLIAM B. KLEE, '33
Warren, Ohio

Memories Revived

I am surprised and flattered by the Bronze Beaver Award. Even while at M.I.T., I felt a deep and sincere responsibility for the school; responsibility is a better word than obligation. The school can do so much for people, the country, and the world, that its very strength is overwhelming. . . .

In any endeavor one attempts, the completion of the task, or the organization or whatever, is the only thanks required. Rewards or honors for what one wants to do in the first place do not seem correct, and somewhat out of place. The satisfaction of seeing programs go well is the best reward—"to thine own self be true."

Back in 1957, in receiving the Compton Prize, I felt only wonder and humility. When I look at it today I still don't understand, and still feel exactly as then.

I can only say thank you . . .

HARRY B. DUANE, '57
Corsico, Milano

An Honor Shared

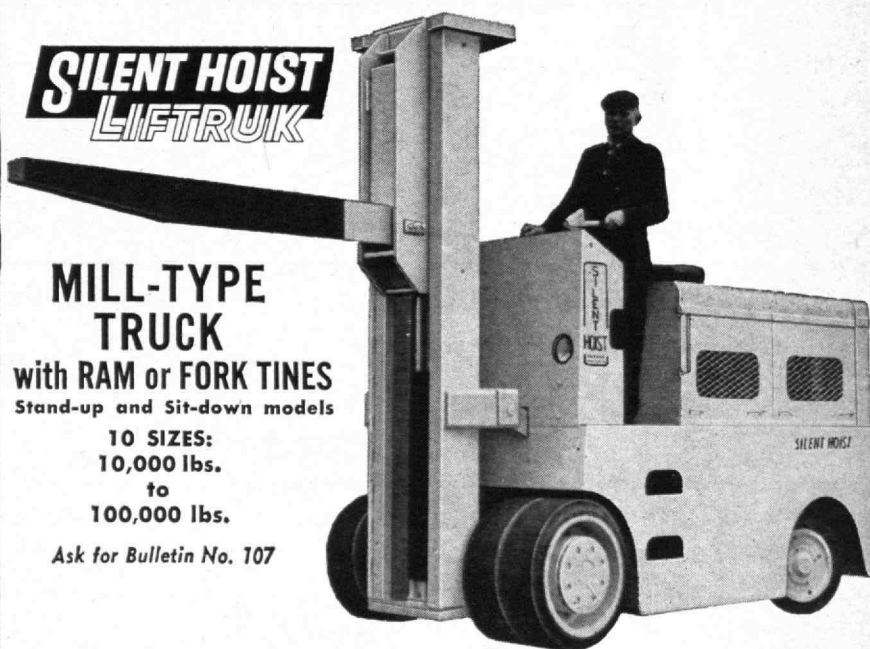
In accepting the Bronze Beaver Award I wish to pay tribute to the many co-workers in the M.I.T. Club of Southern California who have given generously of their time and are greatly responsible for whatever degree of success we have achieved in the activities noted in the citation.

I want these men and the Club to share the recognition of service in behalf of the M.I.T. Alumni Association, symbolized by the Bronze Beaver Award.

SAMUEL E. LUNDEN, '21
Los Angeles, Calif.

What do these firms have in common ???

ALUMINUM COMPANY OF AMERICA
ALUMINUM COMPANY OF CANADA
AMERICAN STEEL FOUNDRIES
BETHLEHEM STEEL COMPANY, INC.
CANADIAN BRITISH ALUMINUM CO., LTD.
CONTINENTAL CAN COMPANY, INC.
EASTERN STAINLESS STEEL CORPORATION
GENERAL CABLE CORP.
INLAND STEEL COMPANY
JONES & LAUGHLIN STEEL CORPORATION
NATIONAL STEEL COMPANY
UNIVERSAL-CYCLOPS STEEL CORPORATION
UNITED STATES STEEL CORPORATION



**SILENT HOIST
LIFTRUCK**

**MILL-TYPE
TRUCK**
with RAM or FORK TINES
Stand-up and Sit-down models

10 SIZES:
10,000 lbs.
to
100,000 lbs.

Ask for Bulletin No. 107

OUTSTANDING FEATURES
PERFORMANCE • ACCESSIBILITY • PREMIUM COMPONENTS

SILENT HOIST & CRANE CO.
BROOKLYN 20, N. Y.

PROFESSIONAL CARDS

JACKSON & MORELAND

DIVISION OF UNITED ENGINEERS & CONSTRUCTORS INC.

Engineers and Consultants

BOSTON, MASSACHUSETTS

EADIE, FREUND & CAMPBELL

Consulting Engineers

500 FIFTH AVENUE

NEW YORK, N. Y. 10036

Mechanical—Electrical—Sanitary

Air Conditioning—Power—Process Layouts

James K. Campbell '11

METCALF & EDDY | ENGINEERS

BOSTON • NEW YORK • PALO ALTO

THE KULJIAN CORPORATION

Engineers • Consultants

UTILITY • INDUSTRIAL • CHEMICAL

Power Plants (Steam, Hydro, Nuclear), Public Works, Processing Plants, Oil Refineries, Textile Plants, Institutions, Highways, Expressways, Airports & Facilities, Military Installations.

H. A. KULJIAN '19

E. J. HEALY '24

A. H. KULJIAN '48

1200 NO. BROAD ST., PHILADELPHIA 21, PA.

LOOMIS AND LOOMIS

consulting professional engineers

STRUCTURES

FOUNDATIONS

WINDSOR

CONNECTICUT

FABRIC RESEARCH LABORATORIES, INC.

Research, Development, and Consultation

In the Fields of Fibrous, Organic, and Related Materials

1000 Providence Highway

Dedham, Mass.

(At Route 128 and U.S. 1 Interchange)

W. J. HAMBURGER, '21 K. R. FOX, '40 E. R. KASWELL, '39 M. M. PLATT, '42

SOIL TESTING SERVICES, INC.

Consulting Soil and Foundation Engineers

Site Investigations

Foundation Recommendations and Design

Laboratory Testing, Field Inspection and Control

111 Pfingsten Road

Northbrook, Illinois

CLYDE N. BAKER, JR. '52

SYLVIO J. POLLICI '56

FAY, SPOFFORD & THORNDIKE, INC.

Engineers

Airports, Bridges, Express Highways

Water Supply, Sewerage and Drainage Systems

Port and Terminal Works

Industrial Plants

Refuse Disposal

11 Beacon Street

Boston, Mass. 02108

CAPITOL ENGINEERING CORPORATION

Consulting Civil Engineers

DILLSBURG, PENNSYLVANIA, U.S.A.

ROBERT E. SMITH '41, *President*

MAURICE A. REIDY ENGINEERS

Foundations and Soil Mechanics

Structural Designs • Buildings • Bridges

101 TREMONT STREET

BOSTON 8, MASS.

CHARLES NELSON DEBES ASSOCIATES, INC.

Engineers and Consultants

Structural, Electrical, Mechanical, Acoustical

Industrial, Commercial and Municipal Projects

915 EAST STATE ST.

ROCKFORD, ILL.

C. N. DEBES '35

MUESER, RUTLEDGE, WENTWORTH & JOHNSTON

Consulting Engineers

Foundations for Buildings, Bridges and Dams;

Tunnels, Bulkheads, Marine Structures, Soil Studies and

Tests; Reports, Design and Supervision

WILLIAM H. MUESER '22

PHILIP C. RUTLEDGE '33

415 Madison Ave., New York 17, N. Y.

BREWER ENGINEERING LABORATORIES

Consulting Engineers

Electric Strain Gage Testing • Stress Analysis

Structural Model Testing • Structural Testing

Vibration Analysis • Strain Gage Switches

Ground Support Mechanism Design

MARION, MASS.

TEL. 617-748-0103

G. A. BREWER '38

J. D. INGHAM '43

CLEVERDON, VARNEY AND PIKE

Consulting Engineers

Structural

Heating and Ventilating

Electrical

Air Conditioning

Civil

Plumbing

120 TREMONT STREET, BOSTON, MASS. 02108

15 Alumni Are Honored For Their 1965 Fund Work

At the M.I.T. Alumni Council's final 1965 meeting, Gregory Smith, '30, reported that on November 26 the 1966 Alumni Fund had reached 30 per cent of its two goals: \$2,000,000 and 20,000 contributors. Mr. Smith then recalled the outstanding work of 15 men for the 1965 Fund and presented certificates of achievement to Alan W. Burke, '20; Stanley C. Dunning, '17; Howard L. Livingston, '51; W. Hugo Liepmann, '57; James O. McDonough, '43; Francis M. Mead, '29; Robert E. Minot, '32; L. Dennis Shapiro, '55; Stanley H. Sydney, '52; Paul Wing, Jr., '34; John L. Danforth, '40; Henry R. Kurth, '21; John W. Lacy, '42; Edward B. Roberts, '57; and Clarence R. Westaway, '33.

President Samuel A. Groves, '34, of the Association,

presided at this 382d meeting of the Council, and Chairman James R. Killian, Jr., '26, of the Corporation, Professor Thomas H. D. Mahoney, and O. Robert Simha, '57, addressed the meeting on affairs in the city of Cambridge. Dr. Killian noted that except for two large utilities, M.I.T. is the largest taxpayer in the city, and called attention to the contributions of its Alumni and staff to city affairs.

Professor Mahoney, who recently was re-elected to the Cambridge City Council, discussed the plans for the NASA Space Center, the Kennedy library, and an inner-belt highway which has been the subject of much controversy. Major problems ahead, he said, include the pollution of the Charles River, traffic, recreation facilities, and the insufficiency of medium and low-cost housing.

Mr. Simha, who is M.I.T.'s Planning Officer, called attention to the Institute's intensive use of land, the costliness of expansion, and changes which will follow completion of the \$60,000,000 NASA Space Center.

MAIN CHAS. T. MAIN, INC. *Engineers*

• Studies and Reports • Design
• Construction Management

Industrial Plants • Textile Mills • Pulp and
Paper • Graphic Arts • Thermal Power • Hy-
droelectric Power • Power Transmission •
Nuclear Facilities • Industrial Process

441 STUART STREET, BOSTON, MASS. 02116, TEL. (617) 262-3200
1301 E. MOREHEAD ST., CHARLOTTE, N.C. 28204, TEL. (704) 375-1735

*Selenar and thalassar
mechanisms
Turric, alphanumeric*

WILLSEA WORKS
ROCHESTER, N.Y. 14605

ALEXANDER KUSKO, INC.

Consulting Engineers

141 Main Street Cambridge 42, Mass.

ELiot 4-4015

Research and Development in

Magnetics
Electric Machinery
Instrumentation

Semiconductor Circuits
Control Systems
Power Supplies

A. KUSKO '44

E. A. PARKER, JR. '42

C. A. RAMSBOTTOM '55

EDWARD R.  ARDEN CORP.
Builders Engineers

■ EDWARD R. MARDEN '41
PRESIDENT
Registered Professional Engineer

280 Lincoln Street
Allston, Mass.
782-3743

SYSKA & HENNESSY, INC. *Engineers*

John F. Hennessy '24

John F. Hennessy, Jr. '51

144 East 39th Street
New York, N.Y. 10016

DESIGN • CONSULTATION • REPORTS
MECHANICAL • ELECTRICAL • SANITARY

ELEVATOR & MATERIALS HANDLING

Washington Office: 1155 15th Street, N.W.
Washington, D.C. 20006

William H. Coburn & Co. INVESTMENT COUNSEL BROKERS

WILLIAM H. COBURN '11

PARKE D. APPEL '22

68 Devonshire Street
Boston, Mass. 02109

Telephone:
227-5964



Designer, 1980

A Boy with Cars in His Eyes

Today, he designs and builds his own precisely conceived model of the car of the future. Tomorrow, the boy grown to manhood may well take advantage of his early opportunity and graduate into a profession that can make valuable use of his creative talents.

He is a member of the Fisher Body Craftsman's Guild—one of more than eight million boys who have joined since 1930.

The Guild is founded on the premise that creativity has no minimum age level, and that stimulating the inventive young mind is, in itself, a worthwhile objective. Since its establishment 35 years ago, almost two and a half million dollars in cash and college scholarships have been awarded to boys aged 11 through 20 who produced the best of the many thousands of models submitted for judging. And the best are always original and imaginative achievements.

Designers of the future? Industry needs them badly. General Motors is proud to have given early encouragement to many who will become the most skilled among them.

General Motors Is People...making better things for you

Class News



'95

We are pleased to report that our remaining 10 members are up and about, weather permitting.

Please send all mail to our resident address: Pelham Hall, 1284 Beacon Street, Brookline, Mass., BE2-2430. Always glad to hear from you or see you there.—**Andrew D. Fuller**, Secretary.

'96

Reverend **Guy Morrill** sent a generous check for the Alumni Fund specified for credit to the class of '96 indicating that he still cherishes memories of the class. Jean G. Morrill writes, "Father is very well. He has very little eyesight. However he is able to enjoy TV, radio and especially records for the blind." It is probably safe to say that he also enjoys hearing about baseball.

Henry K. Sears of 308 South Clifton Street, Wichita, Kansas, as recorded in the November issue of the Review, died on April first. He and his daughter Mrs. Elbert Nangle who survives him, were at the 60th reunion. He accepted President Walker's suggestion made to the class as seniors that there was a good field and a demand for teachers. After serving as teacher, instructor and administrator in several high and preparatory schools in the East, he joined the faculty of the University of Kansas. He retired in 1954 but continued to tutor in math. He was made a charter member of Pi Mu Epsilon, composed of outstanding students in math and members of the faculty. The secretary has written to Mrs. Nangle expressing the sympathy of the class.—**James M. Driscoll**, Secretary, 129 Walnut Street, Brookline, Mass.

'97

For class notes for '97 I can't do better than forward **Ed Hawkins'** letter to **Will Binley**, mostly concerning the latter's visit to Hingham recently. It is good to hear from Ed and know that he is active, despite the loss of his wife some years ago, and his long-time physical handicap.

"Dear Binley: It was wonderful to see you, of whom time has taken so little toll since we graduated in '97. Not once while you were here did I see you indicate any failure of your legs, your hearing, or your eyesight! Unaided, you got out of the car, walked the short distance from the street to the house, up the five steps to the porch, where you preferred to stand

rather than to sit for the brief period of your visit. I was sorry to learn of the death of your wife some five years ago. You are fortunate in having a total of 19 children and grandchildren. If I understood you correctly, you spend your winters in Florida and your summers in Exeter, N.H., having as companions two dogs and a parrot. You came very close to spending your business life in Hingham. As a naval architect, you were employed for 31 years at the Fore River Shipyard in Quincy. During this period your home was in Braintree.

"I hope it will be possible for you to visit me again, when I hope I may be more hospitable. Your visit was so unexpected that I was still much surprised long after you had left. I am sending a copy of this letter to you, asking that you kindly correct any errors on my part, sending the corrected letter to George Wadleigh. A daughter-in-law who has just been fishing at Connecticut Lakes says they have had sleet and snow, so I judge it will not be long before you head for Florida—or you may make your trip to Spain before you go south. May your health, which is truly remarkable, continue. A letter from Spain or wherever you may be will be greatly appreciated. Sincerely, Ed."

May a few other '97ers emulate the above two, in communicating with their self-appointed Acting Secretary—**George R. Wadleigh**, 70 Flower Avenue, Hastings-on-Hudson, N.Y.

'99

David Homer Hayden, IV, was born on November 29, 1874, in Cambridge, Mass., and died on June 4, 1965, in Sarasota, Fla. His ancestors came to America in the early 1700s. His grandfather was a royalist and moved to Newfoundland when the colonies ousted the British rulers. In boyhood David was interested in doing things and at 15 he became an experienced carpenter. Realizing later that he needed more education he went to Exeter, worked and obtained high scholastic rating. At M.I.T. he supported himself with a full-time night job as an architectural draftsman. After a year in Rome his building trades skill and architectural education enabled him to become a supervising co-ordinator of construction in New York, and in 1910 he had his own construction company in New York City. He wrote many articles for the construction journals. David married Florence Garvain of Brockton, Mass. A severe angina attack forced him to retire. He followed the orders of his doctors and lived 40 years in Florida. In the class notes

Happy Birthday

During January three alumni will become 90 years old; 11 will celebrate their 85th birthday; and seven will reach their 80th mark.

January, 1876—**Mrs. L. WALLACE SWEETSER**, '02, on the 7th; **JOSEPH W. AMES**, '98, on the 13th; **GEORGE P. DIKE**, '99, on the 30th.

January, 1881—**HERMANN BEHR**, '10; **BENJAMIN E. MCKECHNIE**, '02, on the 3rd; **ARTHUR G. BRUCE**, '06, on the 6th; **RALPH SHURTLEFF**, '06, on the 7th; **FRED B. CROSBY**, '03, on the 16th; **JOHN H. CADY**, '06, on the 17th; **Mrs. ELINOR W. GARDNER**, '05, on the 18th; **HOWARD MOORE**, '04, on the 19th; **BYRON H. CLINGERMAN**, '04, and **STANLEY B. PURDY**, '08, on the 21st; **JAMES P. BARNES**, '05, on the 26th.

January, 1886—**HARRY S. CHANDLER**, '08, on the 1st; **OTHO L. GOLDER**, '08, on the 2nd; **TETSUTARO HASEGAWA**, '09, on the 13th; **CECIL K. BLANCHARD**, '10, on the 22nd; **JAMES E. GARRATT**, '07, and **HERBERT G. SPEAR**, '07, on the 29th; **WILLIAM H. MEDLICOTT**, '08, on the 30th.

of January 1965 is a description of his solution of the erosion problem on the shore of Sarasota, a splendid achievement for our 90-year-old youngster. David was an honorary member of the M.I.T. Club of Southwest Florida. He is survived by two daughters, Dorothy Hayden Herald and Mrs. Richard Mayer, and a grandson Chris Mayer, all of Siesta Key, Fla. . . . **Percy W. Witherell** went to the reception at the American Academy of Arts and Sciences to celebrate the 80th birthday of Dr. Harlow Shapley on November 2 and to show the appreciation of the world of his scientific achievements in astronomy but particularly of his ability to initiate the collaboration of people in different fields of knowledge. As a life member of the M.I.T. Corporation he has helped in promoting the cooperation of the different departments in the broad fields of science, engineering and the humanities. Our classmates are interested in what the others are doing. Please help by sending in news about your doings and of any others you know about.—**Percy W. Witherell**, Secretary, 1162 West St., Wrentham, Mass.

'00

Harry L. Grant died October 10, 1965, at the age of 86. He was a native of Covington, Ky. He graduated from M.I.T. in Naval Architecture and was the last survivor of that course in our class. He was a member of the Delta Kappa Epsilon fraternity and was very active in class and social affairs. He was well known as a member of the Cincinnati Club, Hare and Hounds, Class Track Team, Varsity Track Team, and the Minstrel Show. Immediately following graduation he spent four years with the New York Shipbuilding Company, following out his studies of Naval Architecture. In January 1905 he changed to the Western

Electric Company and remained with them and the Graybar Electric Company until 1933, having been located in Chicago, Cleveland and Washington. He then set up in Washington his consulting firm, Harry L. Grant Service, the purpose of which was, as a manufacturers' representative, "to assist in matters of general information, development of interest, rulings of the Bureaus, interpretation of the Statutes, sales cooperation, analysis of claims, adjustments with the Bureaus, collection difficulties and so on." This organization evidently filled a great need and apparently was very successful. Harry retired in May 1953 and moved to Jerico, Vt., where he lived for the remainder of his life. For several winters he and his wife traveled in Europe. We last heard from him directly in December last. He is survived by his wife, the former Margaret Scribner, a sister, a brother and two grandchildren.

John M. Higgins of Brookline died last April. He was with us during our freshman year only. . . . **Henry C. Morris** was one of six nonagenarians who were honored at a luncheon at the Cosmos Club in Washington recently. Eighteen were invited but only six could make it. Henry had his 90th birthday on November 1. Three others of our class have made this anniversary: **Gladding, Burns,** and **Gowell** (who is 92). **Elbert G. Allen**, Secretary, 11 Richfield Road, West Newton, Mass.

'03

A conference was recently held at the Sheraton-Plaza Hotel, sponsored by the Boston Architectural Center. There were exhibits, demonstrations and movies illustrating some of the present uses of computers in architecture. Speakers included Dr. Walter Gropius, former Chairman of the School of Architecture at Harvard; Serge Chermayeff, Professor of Art and Architecture at Yale; Edward D. Stone, designer of the U.S. Embassy in New Delhi and other noted buildings, and Henry A. Millon of M.I.T. The stereotype of M.I.T. form of architecture is now dispelled by the new Student Center, recently dedicated as The Julius Adams Stratton Building. President Stratton of the Class of 1923 and eleventh President of M.I.T., is gratefully remembered for his long abiding interest and universal comfort for one and all his extensive student body. This prominent building is easily approached across Massachusetts Avenue from our Main Building and a focal point for all student life, be it West Campus Dormitories or Athletic facilities. Designed by Eduardo Catalano, Professor of Architecture at M.I.T. with two associates, it presents a monumental look from all sides. The fourth and fifth floors are contained in a massive overhang, above enormous plate glass windows of the second and third floors. On the side toward the plaza are balconies and a gradual stairway providing an atmosphere of relaxation. The second and third floors provide two spacious halls for dining, dances

or such social events as concerts or lectures.

The third floor has a Grill Room, where students secure meals at regular hours and snacks as late as 2 a.m.; small dining rooms for society functions, a lounge, and room for games. The fourth floor has 26 rooms for student organizations' use for music, art, drama, science, fiction, etc. On the fifth floor are the spacious reading rooms where the students may relax or study. Within the parapet surrounding the library section is a roof garden with shrubs and flowers for attractive landscape. The first floor is devoted to the "Tech Coop" with extension space for over 15,000 volumes in its Book Department and for the first time a shop for women's wear—an adjunct for our increasing coed population. The basement is aptly the center for billiards and bowling rooms, a U.S. Post Office, Tailor Shop and extension of Bursar's Office for banking.

A cheerful note came from **Clarence Joyce, V**, now safely home from his annual summer trip abroad, and we await some interesting feature acquired along with his auto trip through Central Europe. . . . **Jim Welsh, VI**, somewhat disturbed by my notice in the November Review, states his new address at Central Beach, Bradford, R.I., is to be considered only his summer address. Jim is still an ardent, most enthusiastic and permanent resident of Winter Park, Fla. . . . News came of the death on March 6 of **George B. Seyms, II**, at his home in Wayne, Pa.; we await further information from his family. . . . Our birthday greetings go to **Roger D. Babson, III**, for his 85th on October 7 at East Longmeadow and **James W. Welsh, VI**, of above notation on October 20; **J. Russell Jones, III**, of Randolph, Va., on November 15 and **Miss Alice F. Blood, V**, on November 25 at New Hampton, N.H.—**John J. A. Nolan**, Secretary, 13 Linden Avenue, Somerville, Mass.; **Augustus H. Eustis**, Treasurer, 131 State Street, Boston, Mass.

'04

The news is not very cheerful this month. Our secretary is still confined to the Wellesley Manor Nursing Home in Wellesley, Mass. Word was received of the passing away of our loyal classmate **Harry Rollins**. The following is from the Pasadena Star-News. "Private services will be held in Bronxville, New York, for Harry Tebbetts Rollins, who died while visiting his family in New York. He had lived in LaJolla since 1937, and was a 32nd Degree Mason and Knight Templar, a member of the Kiwanis Club of LaJolla, and the LaJolla Beach and Tennis Club, and the Fourth Church of Christ Scientist, San Diego, at LaJolla. He was also treasurer of the Musical Arts Society of LaJolla from its founding." The class extends its sympathy to his widow, Mrs. Glendora Rollins, and his son and three daughters.—**Eugene H. Russell, Jr.**, 82 Stevens Road, Needham, Mass.; **Carle R. Hayward**, 1070 Beacon Street, Brookline, Mass.

'05

J. Edward Vivian, Professor of Chemical Engineering, has informed me of still another honor to our classmate, **Doc Lewis**. In a letter from W. B. Franklin, president of the American Institute of Chemical Engineering, to its membership, I find this note, "I think all of our members will be as happy as I was when I learned that the efforts of a great pioneer in chemical engineering, Warren Kendall Lewis, have been recognized by the engineering profession. Our distinguished college has been chosen to receive the John Fritz Medal for 1966. This is given by the five founder societies for achievement beyond the ordinary in the engineering area. I hope the details can be worked out so that it will be my honor to present this medal to Professor Lewis at the Awards Banquet at the Philadelphia meeting. Incidentally, Doc's former students and all members interested in the philosophy of chemical engineering will be interested in the tape, 'An Evening with Doc Lewis,' which was taken from Doc's comments at the Boston meeting. It is available from the National Office, along with a reprint of 'A Dollar to a Doughnut,' a compilation of memories of Doc's classes supplied by former students." The office referred to is at 345 E. 47 Street, New York City. My thanks again to Professor Vivian, because I am sure Doc's modesty would prevent him from notifying me direct.

I am informed through the Alumni Office that **Theodore P. Moorehead**, 424 Staten Avenue, Oakland, Calif., died on October 1, 1965. I have endeavored through two of our California classmates to get more detail, but to date have been unsuccessful. This does not mean that said classmates have not tried.

Ed Poor, VI, has a new address for the winter: 709 Idlewyld Drive, Fort Lauderdale, Fla. He spends his summers at New London, N.H. Some will remember Ed as the founder of Sylvania. . . . News certainly is scarce this month. We started off at a red hot pace in November. Please, fellows, help me pick up the slack.—**Fred W. Goldthwait**, Secretary, Box 32, Center Sandwich, N.H.; **Gilbert S. Tower**, 35 N. Main St., Cohasset, Mass.

'06

One of our classmates, **Mrs. Sydney M. Williams** (Mary Peele Hunnewell), a longtime resident of Wellesley, celebrated her ninetieth birthday last November 17 and a suitable card was sent to her on behalf of the class. . . . In the December notes I should have reported a message from Mary and **Harry Fletcher, II**, back in September when they were relaxing with friends in the White Mountains of New Hampshire and then visiting his relatives in Portland, Maine. They hope to be with us next June for our 60th reunion; how about you? . . . In the latter part of October, while visiting friends in

New Rochelle, I had a brief phone chat with **George Burpee, I**, at his home in Bronxville. They are well and George still gets to 120 Wall St.—Coverdale and Colpitts—at intervals. He and Sherm Chase get together at meetings of the Consulting Engineers in New York City. Which reminds me that the Chases had an automobile accident last fall that had put him out of circulation for a couple of weeks; Bertha suffered some bruises too. I have just talked with them and they will be in circulation again after December 1, when they expect delivery of a new, smaller car. . . . **Will Farley, I**, was in Jordan Hospital, near Plymouth, for several weeks and by mid-November was able to move around a little. By January he is probably back home in Manomet. . . . In the fall **Frank Benham, I**, made his annual trek from his apartment in Arlington, Mass., to his apartment in Daytona Beach where his address is still P.O. Box 1175 and Zip code #32015. . . . The **Bob Cushmans'** zip code is 79212.

Through the alumni fund office came a report from his wife that **Colby Dill, X**, had died on August 8, 1965. He had graduated from Harvard and joined our class for junior and senior years, then took graduate work for his M.S. with '07. Born in Boston December 29, 1882, his home address was Newton Center, although he prepared at Boston Latin and Roxbury Latin. While with '06 he was a member of the Glee Club, and his thesis was on the Corrosion of Iron and Steel. For our 10-year history he reported that for a few years he was engaged in leather tanning, then fuel analysis with the U.S. Geological Survey. Joining the Perth Amboy Chemical Works in N.J. around 1908, he became works manager, then around 1920 was a consulting chemical engineer in Woodbridge. However he soon joined the Rossler and Hasslacher Chemical Company as assistant to the Vice-president and eventually became a director and general superintendent. By 1934 and until the mid-forties he held several executive posts with the DuPont Company in Wilmington, then retired to Kennott Sq., Pa., owner and operator of Dill Farms on Bayard Road. In 1911 he married Elsie DeLamarter—deceased—and remarried. In '60 he reported six children and twelve grandchildren. A note of sympathy was sent to the widow and his family.—**Edward B. Rowe**, Secretary-Treasurer, 11 Cushing Road, Wellesley Hills, Mass. 02181.

'07

"ME" MacGregor, VIII, certainly practices his hobby of mountain climbing during the summer months. During June he took his twin granddaughters and spent some time in the Green Mountains of Vermont. The two girls, Anne and Ellen MacGregor, daughters of "ME"'s son Arthur, had just been graduated from the University of Massachusetts. Together, they climbed Kellington Peak and Mts. Abraham and Ellen via the "Long Trail." On August 31 "Red

Mac of the Mountains" climbed Mt. Washington. He had to walk through snow the last two miles of the trail. The day before, the wind gusted to 105 miles per hour; and the temperature went down to 19.6°—the coldest August day ever recorded. The trip on this day was made via the cog railroad. He has now finished all the New England mountains in the 4000-foot list and has been elected to membership in the New England 4000-foot club. This coming January, at the annual meeting of the Appalachian Mountain Club, "Mac" will receive a scroll and patch in recognition of his many climbs.

Our President, **Don Robbins, II**, celebrated his 80th birthday October 5. The local Barrington Paper reports that a very special celebration was held at his home, 10 Stratford Road, Barrington, R.I. Friends and relatives came from Fairfield, Conn.; West Newton, Mass.; Hadonfield, N.J.; and Martinsville, Va. Don has nine grandchildren and three great grandsons. He has lived in Barrington 27 years, retiring from his association with the International Braid Company of Providence 15 years ago.

My secretary who transcribes these notes considers the following of enough interest to be included in this month's news items: Over the years from 1930, right up to the present time, **Philip B. Walker, I**, has had an active part in the development of the Providence Bible Institute from a small college in Providence to its successor, Barrington College in Barrington, R.I., which today has an enrollment of more than 600 students on a well developed campus of 110 acres. Phil is the senior member of the board of trustees, having served in this capacity for over 30 years. He also is chairman of the building committee of the college and, in the last few years, has supervised the alteration of a large farm building into a music building and a second building into an athletic center. Three new dormitories, each housing 140 students,

have been completed and a dining hall erected as part of a three-building complex for student activities. On October 16, 1965, Homecoming Day was held; and the dormitory just completed in September was dedicated as "Walker Hall," in appreciation of the time and effort Phil Walker has given to the college. It is of interest to note that the new President of this College, Charles E. Hummel, inaugurated on October 1, 1965, obtained his Master of Science degree at M.I.T. with the Class of '49. Both Don Robbins and Phil Walker attended the Inaugural Convocation. A Student Union Building, to be completed by May, 1966, is now under construction.

Don Robbins, our Class Agent, has again made an effort to put before us the results of the drive for the 1965 Alumni Fund and the needs to be met by the 1966 fund drive. 1907 gave over \$21,000 through 46 contributors in 1965—a generous contribution, but only one half of our 98 members were givers. It is a false supposition that gifts under \$100 are not wanted. If you cannot give over \$25, send it in and see if it is not appreciated. A \$5 contribution brings the Review for a year. Be loyal enough to at least get the Review and read the '07 notes and find out what your classmates are doing. . . . It is not too early to keep in mind that our 60th Reunion in June 1967 is only 18 months away. Where will it be held? Who will plan to attend? Are you going? Write me your thoughts on this subject.—**Philip B. Walker**, Secretary and Treasurer, 18 Summit St., Whitinsville, Mass.; **Gardner S. Gould**, Assistant Secretary, 409 Highland St., Newtonville, Mass.

'08

The first dinner meeting of the 1965-66 season was held at M.I.T. Faculty Club, Cambridge, Mass., on Wednesday, No-

Deceased

WESLEY HALLIBURTON, '92, November 1
HENRY K. SEARS, '96, April 1*
DAVID H. HAYDEN, '99, June 4*
MILES S. SHERRILL, '99, November 19
HARRY L. GRANT, '00, October 10*
JOHN M. HIGGINS, '00, April*
EARL B. CRANE, '02, January 14, 1965
HOWARD L. PIERCE, '04, August 16, 1964
BERTRAM A. RICHARDSON, '04, June 10
HARRY T. ROLLINS, '04, October 15*
THEODORE P. MOOREHEAD, '05, October 1*
COLBY DILL, '06, August 8*
JOHN AVERY, '10
RICHARD F. GOODWIN, '10, October 3*
FRANKLIN OSBORN, 2d, '11, October 1*
FRED L. FRANKS, '12, June 21*
KARL R. BRIEL, '13, September 26*
ELBRIDGE J. CASSELMAN, '15, October 30
E. THAYER MACBRIDE, '15, August 17*
THOMAS N. TOLAR, '15, October 24*
EDMUND A. WHITING, '15, October 12*
JOAO N. CORREIA, '16, August 30*
STANLEY K. COOPER, '17, February 15
JOHN W. MCCAUSLAND, '18,
September 23*

ROLAND G. BAKER, '20, January 4, 1965
WILLARD B. RIDDELL, '20,
December 7, 1964
ALBERT L. EDSON, '21, October 21*
RICHARD LEE, '21, August
ROBERT M. ARNOLD, '22, July 26*
CLAUS MOLLACH-THELLEFSEN, '22,
August 19
WHITNEY C. HUNTINGTON, '23, March 31
FRED LINDTNER, '23, October 16*
DENNIS R. SCISCENTO, '25, May 10*
A. LEWIS MACCLAIN, '27, August 5
ERIC HARTMANN, '28, November 4
GEORGE W. RIGBY, '28, July 27
ROLF H. MARTENS, '29, July 27*
LEWIS FUSSELL, JR., '32, October 4
JOSEPH C. GORA, '33, September 7*
DONALD S. BULLOCK, '34, July 24
VERNON V. HALVERSON, '36,
January 15, 1964
HOMER HABERLAND, '36, September 16*
ERNEST P. NEUMANN, '38, September 24*
DICKEY CHAPPELLE, '40, November 3
ANTHONY RANTI, '54, September 12*
ROBERT J. ASELTINE, '58, June 3
JAY E. CURRIE, JR., '60, July*
*Further information in Class News

venember 3 at 6 p.m. The following classmates showed up: Bunny Ames, Bill Booth, Nick Carter, Fred Cole, Paul Norton and Mrs. Norton. We met as usual in the cocktail lounge and while enjoying our favorite tonics and the delicious crackers and cheese from the buffet, talked over activities of the past summer. We missed the Davis and Wattles group as they had already gone to Florida for the winter. About 6:30 p.m. we adjourned to private dining room No. 4 for the usual delicious dinner. How about some news?—**H. Leston Carter**, Secretary, 14 Roslyn Road, Waban 68, Mass.; **Joseph W. Wattles**, Treasurer, 26 Bullard Rd., Weston 93, Mass.

'10

The following was received on the death of our Senior Class President, **Richard F. Goodwin**, from the Cerro Corporation, 300 Park Avenue, New York: "Richard F. Goodwin, a prominent nonferrous metal mining executive for many years, died October 3, 1965, at Manhasset, L.I. Mr. Goodwin most recently had acted as a principal consultant to Cerro Corp. in connection with its Rio Blanco Copper Mine project in Chile. Prior to joining Cerro in January 1960 he had been a director and chairman of the executive committee of Southern Peru Copper Corporation from 1956 to 1959. For the previous thirty-three years he had been associated with American Smelting and Refining Company, for the last ten (1945-1955) as vice president in charge of the mining department and a director. Mr. Goodwin also served with Guggenheim Brothers as a consulting engineer from 1917 to 1921 and with Braden Copper Company from 1911 to 1917. Born in Norwich, Conn., on September 29, 1888, Mr. Goodwin graduated from the Massachusetts Institute of Technology (S.B. degree) in 1910. He has resided in Great Neck, L.I. for many years. He was a director and past president of the Peruvian American Association, a member and past president of the Mining and Metallurgical Society of Mining, Metallurgical and Petroleum Engineers and the Mining and Union League Clubs in New York City. During his long career in the mining field, Mr. Goodwin served in a number of other managerial posts, including director of Federal Mining and Smelting Company, vice chairman of Mining Trust Ltd. of London, president of Premier Gold Mining Company and president of Saudi Arabian Mining Syndicate Ltd."

Your secretary has the following news of his own—he was married in Calgary, Alberta, Canada on October 25, 1965.

The following letters are the second instalment of those received from my request for news. . . . **Carroll Benton** writes: "I thought the class picture was very good; also, Jack Babcock's report on the Reunion. Sorry that my wife, Ann, had to miss the affair but she did not feel that she would be fully able to enjoy the various functions with a broken wrist

which was still in a cast. Later in the summer we went to New Hampshire, spent a few days with relatives at Manchester, then on to Lake Winnepesaukee for a week at a small inn near Wolfeboro. My niece and her husband joined us there. From there we went to Great Barrington, Mass., for a week, then up to Stowe, Vt., and vicinity for a few days."

. . . **George S. Thomas** writes: "Thank you so much for the photograph of the class reunion held in June of this year and showing so many of our classmates and their wives who were able to get together at this late date. They looked very well indeed. My acquaintances at Tech were quite limited due to my registration as a special student and my registration in course XIII, which had a quite small registration. I do not see in the photograph any of my course, and a recent Review reports the passing of Lawrence Chapman, who was a classmate and for years a Professor at the Institute. I have seen no recent reference to Gordon Holbrook, who was course XIII and quite well known, so that I fear he too may have passed on. Kindly notify me if I have guessed wrong. My memories of the Class Reunion in 1950 at our Fortieth reunion are very pleasant and I remember several in this photograph who were there at that time. Having been retired from active work now for over 10 years, Mrs. Thomas and I take life pretty easy by spending our summers at our summer home on Lake West Okoboji in northwest Iowa and our winters in St. Petersburg, Fla. Our chief interest is in following the educational development of our ten grandchildren, five of whom are already college graduates, two at present in college, and two still in grade and high school. The growth and development of science and engineering since our time at Tech has been most astonishing and beyond the reach of any of us to comprehend. Of it all, I have the greatest interest in the development of atomic power."

. . . **Charles F. Robinson** writes: "While I am pleased to answer your recent letter asking for current news of our M.I.T. class of 1910, I regret that I do not have any. However, I do wish to state that I think your idea of sending out copies of the picture taken at the June reunion in Cambridge was a splendid one. For those who attended, it will be a nice souvenir, and for those who did not, it should arouse memories of years ago at Tech. In my case, from my own memorabilia, I dug out a picture showing 22 of our classmates all assembled for a group picture, with their names printed below. I have no idea when, where, or why this picture was taken but among those in it were you, F. F. Bell, Bill O'Hearn, and H. G. Manson, all of whom show up in the June reunion picture. Maybe you might recall it. The comparisons were startling. Several other pictures taken from the theatrical program of the Tech Show of 1907 entitled "William-Willie and Bill," show among others, you, Art Curtis and myself in the garb of chorus girls." . . . **Phillip T. Harris** writes: "Many thanks for your 'report' of Sept. 17, the copy of Jack Babcock's report of the 55th Class reunion and the photo. The

latter, with identifications well worked out, shows a big group of VIP's. I hope you will get a lot of response to your efforts to get news of our classmates. It is bound to be interesting and don't forget news of yourself! The lovely girl, Garnet Chamblin, whom I married a year after graduation, made my life a happy one for 53 years. She passed away last year. We had three children—a girl and two boys, then twelve grandchildren and, to date, six greatgrands. In 1954 I retired from practice as an architect. It was an enjoyable business—always a surprise and—usually—gratifying, to see a great building—or a little one—emerge into a reality from a tiny idea in my head (with plenty of help from other heads)." . . .

Herbert W. Cummings writes: "Thanks for the photograph, it is excellent. We have discontinued living in Florida winters because of Mrs. Cummings' serious illness. There is nothing to write of interest." . . . **Harold R. Perry** writes: "I appreciated very much the picture of my classmates at the 55th reunion. Unfortunately I only recognized one and that was Bob Burnett. I never see much news of Course III men in the Review. Have you any information about Bert Wohlgenuth, Bill Hargraves, or Paul Hopkins?" If anyone has information regarding these men please contact Mr. Perry, 64 South Pitt Street, Carlisle, Pa., 17013). . . . **Horace S. Hinds** writes: "Fifty-five years ago you and I were associated with one another, for one year, at M.I.T. and at 234 Newbury Street in Boston. My short attendance at these two locations did not impress upon me the loyalty that you have displayed all these years for your class. I want to take this opportunity to thank you for the many reports and invitations that you have so kindly mailed to me in this interim. The photo at hand would indicate that the ranks are thinning. We who remain perhaps should be thankful that we have lived to experience the greatest developments of all the ages. Personally I am very well and hope that you are." . . . **John M. Bierer** writes: "This is the first time since I graduated that I have written to anybody about our class. I feel very definitely that you are doing a good piece of work and I read the Review each time it comes out with a great deal of interest. I have led a busy life and I am now retired, not 100 per cent loafing, but doing nothing of any real importance. I am running out the clock, working a little, and playing as if I am going to live for ever, but I am perfectly willing for Old Father Time to swing any time he is ready. I am ready for him."—**Herbert S. Cleverdon**, Secretary, 120 Tremont Street, Boston, Mass. 02108.

'11

I have a little more information about **Franklin Osborn** who died October 1, last, after an extended illness. He was born and educated in Peabody, Mass. He worked for 40 years for the Anaconda Mining Company in Potrerillos and

Chucquicamata, Chile. Interment was at Monument Cemetery in Peabody. He is survived by a brother, daughter, four sons, and nine grandchildren. . . . The annual meeting of the class was held at the Faculty Club on November 8. **Marshall Comstock, Morris Omanski** and I were there with our wives. **Jack Herlihy** came without his wife who is in poor health. **O. W. Stewart** had intended to come, but had to go to the Jordan Hospital in Plymouth for a serious operation; and **Carl Richmond** stayed away because of a bad cold. The lunch was good and we spent a pleasant hour reminiscing and talking of plans for the 55-Year Reunion which comes next June. You will be hearing from **Morris Omanski** about the detailed plans for the reunion. Do plan to be there. . . . Reply cards from the notice of the November get-together contained the following notes: From **Walter Connolly**, "Still going strong, but travel little." From **Willis Hodgman**, "I shall be a few hundred miles away at that time. I was expecting to be among those present and very sorry not to be there. Am continuing 'on the job' with our family owned business, Hodgman Manufacturing Company, Inc. and still do considerable traveling for that company." From **John A. Bigelow**, "Sorry I can't make it, I'm getting too old. You young fellows have fun. I've had a few bad heart spells in the past 12 years so I take it very easy and hope to live to be 100. **Morris Omanski** was in my squad, Company C at military drill and Company C took the honors and was accorded a banquet in the Tech Union. Give him and all the others my best wishes. I'd like to be in on a technological too." . . . **L. Gordon Glazier** gave a change of address to P. O. Box 218, Concord, Mass. 01742. . . . Again, keep the 55-Year Reunion in mind and write to Obie.—**Oberlin S. Clark**, 50 Leonard Rd., North Weymouth, Mass. 02191

'12

Word has just been received of the death of **Fred L. Franks** who retired to Fort Lauderdale, Fla., several years ago. . . . **Joe Champaign**, New England master of dance, is still teaching in a limited way. They summer at Tiverton, R.I., and have an apartment at Chestnut Hill for the winter. They are both in the best of health and we all enjoyed seeing them at the reunion. . . . **Bill Lynch** was unable to come to the reunion but he writes from Beverly Hills that his eye trouble is clearing up although still a nuisance. He hoped to get to Europe this past summer as he enjoys revisiting the places he knew so well during World War I.

Guy A. Swenson of 111 Center Street, Concord N.H., was unable to get to the reunion because he suffered a slight coronary attack. He is progressing well and is looking forward to being with us two years from now. Anybody driving through Concord should certainly look him up as he would be delighted to see you. . . . Mrs. **Earl E. Ferry** wrote from Pittsfield, Mass., that Earl is recovering

from a major operation, X-ray, blood transfusion and all that goes with it. He is progressing well, however, and hopes to get out soon. His son is helping out at the Ferry Lumberyard plant in Pittsfield. Earl has long been chairman of the Airport Commission and instrumental in its expansion. The second son is now at General Electric in Cincinnati, working on jet engines, after having seen heavy combat service in Italy during World War II. . . . **Ralph Ferry** and his wife suffered a severe automobile accident last Spring and were both very seriously injured as they were forced off a culvert by a careless driver. Mrs. Ferry, although more seriously injured, has recovered enough to drive and Ralph is coming along more slowly. They are living at St. Michaels, Md., and state that their latch-string is always out.—**Frederick J. Shepard, Jr.**, Secretary, 31 Chestnut Street, Boston 9, Mass., **John Noyes**, Assistant Secretary, 3326 Shorecrest Drive, Dallas 36, Texas.

'13

"Hi, Young Lover, Where Ever You Are." This is a start of another year. **Bill Brewster** as our Class Agent of the Alumni Fund, is endeavoring to increase the number of 1913 contributors from 100 as well as to increase the amount contributed from \$16,000.00. What do you say? You can count on the Capens to increase their amount substantially. . . . **George Wallace** has donated a mere \$300,000.00 for a Center for the elderly in his home town of Fitchburg. George and his dear wife have already contributed for the purchase of the First Baptist Church. We must applaud the Wallaces as too many of us forget those elderly citizens who have given their best to their communities and are now dependent on harsh and unsympathetic governmental officers. The Canton housing authority is planning modern homes for the elderly as well as those people who will be relocated as the result of urban renewal. . . . Time marches on and we must report that our dear classmate, **Max J. Shafran**, passed away September 12, 1965. He is survived by his wife, Rose (Schwartz), his beloved daughters, Bernice Fainel of Burlington, Vt., and Sylvia Schwartz of Manchester, N.H. and several grandchildren. Also surviving are his sisters, Anna Dinnerman and Jennie Sandler, and a brother, Samuel Shafran of West Roxbury. We extend heartfelt condolences to his entire family.

In our report for the December issue of The Review we mentioned that **Karl Briel** had written a very friendly letter from Hollywood, Fla. Also, we had received a change of address showing Karl's address as The Baptist Home of R.I. We sent a postcard to him, but we never received a reply. A few days after the postcard was forwarded, a further change of address stated that Karl passed away on September 26, 1965. If anyone has more details concerning our deceased classmate, we shall gladly add to our notes. Due to the very heavy work load that your scribe is experiencing while organizing the Urban

Renewal Program, this month's news must be concluded. The February issue will contain many comments from loyal and dues-paying classmates including **Bob Bonney** and **Allen Brewer**; it appears that our 55th Reunion will be a success.—**George Philip Capen**, Secretary and Treasurer, 60 Everett St., Canton, Mass.

'14

We have just had a satisfying phone talk with one of our classmates whom we had not seen since graduation, **Edwin D. Hayward**, of San Francisco. Ed was especially close to us as a freshman, since he is about the same height as we are, and we were usually one and two in the drill lineup. Although a New Englander by birth (Bridgewater), he made tracks for the West coast after brief sessions as assistant at M.I.T. and instructor at DePaw. More recently he was part of Management Engineering Associates, Inc., a consulting firm. For the last ten years he has been doing consulting work on his own on a semi-retired basis. I'm afraid that our discussion with Ed did not touch many high spots of technical interest, being limited in large degree to more prosaic family matters, children, grandchildren, and the like. . . . Some of our classmates go South for the winter, but **Thorn Dickinson** merely goes South to Broadway: "Dear Herman: This is merely to advise you for your records that I have returned to the above address (Hotel Woodward, Broadway at 55th Street, New York, 19, New York.) for the winter after spending five weeks at Elk Lodge, Blue Ridge, New York, where my principal activity is making trails. Sincerely, Thorn Dickinson." If you are really good at it, Thorn, we can use a capable trail maker here in Maine.

Here's a letter from **Alden Waitt**, a few months late, but I hope you will find it interesting and perhaps include Portugal in your next European visit. "Dear Herman: Your letter of April 11 is here with me and I have a feeling that it was never acknowledged, for when I found it in my brief case there was no indication of a reply on it. I generally jot down the date on correspondence when I write. It deserved a speedier reply. I'm happy to know that you and I are of the same persuasion, and that you have been touched as I have by the racial injustices that persist throughout our country. And, by the way, you will be interested to know that deep in the heart of Texas we have a very vigorous and active Unitarian community. Our church built about three years ago (after some 10 or 12 years of inadequate housing) is a source of great satisfaction to us. I was chairman of the building committee and am very happy with the results of the committee work. The location on a hill overlooking the city is perfect. (I'm sorry to report I had urged a different site closer in town, and am glad my views did not prevail.) We have some 300 members and an average attendance well over 100. As you will note I'm writing from Portugal. We came here over a month ago and leave next

week. One of the loveliest places I've found in all of Europe. A country just moving into the 20th century and still holding fast to many old ways. Many good hotels and reasonable prices (except the Ritz where I stayed only three days while in Lisbon). Not too crowded yet, if one goes beyond Estoril and Cascais a few kilometers. We have enjoyed Guincha (near Estoril) largely because of Estalagim Muchaxo where the food is superb and the staff made us feel as if they really wanted us. The Hotel do Mar at Ilesimbra just south of Lisbon is one of the most beautiful I've ever patronized and the village of fisher folk most quaint and interesting. Food O.K. and prices not bad but it was a bit stiff and impersonal. If you ever go to Portugal again, try 'em both. I prefer Muchaxo at Guincha in spite of the everlasting wind that blows cold around the Cabo da Roca, the westernmost point in Europe, and the food and hospitality so splendid that it (Muchaxo's) attracts royalty and dignitaries of all sorts. While I've been here we've had the King and Queen of Italy, Royalty of Rumania, Isaac Stern, President of Portugal, etc. Perhaps you know Muchaxo's.

... I had a very fine letter (forwarded to me here) from **O. C. Clisham**, Course X, '14. He had read the class notes telling of my painting and wrote to tell me he too is a painter, and sent a photo showing him with his paintings. He is apparently far more skillful with the brush than I am and more ambitious in his efforts since he does figures as well as landscapes. I can't draw well enough to do figures. He is very modest about his accomplishments, but I'm inclined to believe he is doing first-rate work and is really an artist as well as a painter. I enclose the photo he sent me. At the time he wrote he was showing 15 paintings, chiefly landscapes, at the "Old Forge" in Rindge, N.H. He also reminded me that Homer Calver does some painting as I believe was noted in class notes after I ran into Homer and his wife in the town plaza in San Miguel, Allande, Mexico two and one-half years ago. Homer was studying art there. I note your remark that the Townends and Chatfields are in Europe this summer and that the Affels may run over too. Sorry not to have crossed the trails of any of you. We had planned to do Scotland and then finish up in Bavaria (which we love—especially Berchtesgarden) but Portugal is so fascinating that we've spent all our time here. London was too crowded for comfort so we left in three days. Portugal is paradise for a landscape painter. I've done eight small paintings and four of them seem fine. Wish I had time for more work here. We have a cottage at Chatham on the Cape from August 1-21 at least, so we must get back. I'll be at Sequansett Cottage, Indian Trail Road, West Chatham. Drop by and see us if you are on the Cape. I'm looking forward to the Cape as my son and his daughter will be with us. Thanks for your letter. Our best to you and yours. Alden."

This job of secretary and Alumni representative naturally affords the opportunity to get an early picture of what goes on at Cambridge, which we will admit is

very pleasing. Of course, it inspires a lot of retrospective comparisons with our day. You have heard of or seen from time to time the physical improvements in the Institute since our time. You who were at our most recent reunion or Alumni Day festivities are especially well informed. There are, however, some more subtle advantages that today's freshman have, which are not so obvious. For example, there is a new freshman handbook entitled "The Social Beaver." We find that this document includes ump-teen pages giving in considerable detail, the location and specific directions for finding all the schools, and hospitals, where female companionship may be found. Yes, the Technology doth move.

—**Herman A. Affel**, Secretary, Rome, Maine, Mail: RFD 2, Oakland, Maine; **Ray P. Dinsmore**, President, 9 Overwood Rd. at West Market St., Akron 13, Ohio; **Charles H. Chatfield**, Assistant Secretary and Alumni Fund Class Agent, 177 Steele Road, West Hartford, Conn.

'15

Happy New Year with the hope you and your families have all enjoyed a pleasant and comfortable holiday season. Although our Fiftieth Reunion is now six months in back of us, its success and enjoyment shine on in front of us. Recognition that 1915 is "The Class Supreme" was made by the Alumni Association at the dinner for the Alumni Officer's Conference at M.I.T. on September 10, when 1915 was presented one of the Bronze Beaver Awards. This is now in Max's custody. You've all had that splendid October 4 letter from Max and George. 1915 certainly is doing its part for the Alumni Fund. At the same meeting another Bronze Beaver was awarded to **Jack Dalton**, which he certainly deserves for his devoted work for M.I.T. and our class. This citation was presented with the Beaver award to the class: "CLASS OF 1915: Last M.I.T. class to spend its entire career in Boston, graduated into the turbulence of World War I; celebrator of its 10th reunion at the Depression's Nadir; and its 25th midst the uncertainties of World War II; blest with dedicated class leaders who through these adversities have forged a unity of spirit and sense of devotion to M.I.T. that culminated in their 50th reunion gift—one that will stand apart as a new mark of achievement and inspiring challenge to their successors."

A recent issue of "Frank Lane's Licensed Beverage Review" carried a fine picture of **Sam Berke** with a writeup of his activities in the industry as president of Mr. Boston Distillers, Boston, and The Viking Distillery, Inc., Albany, Ga. Sam still owns and operates a Guernsey breeding and milk farm in Lakeville, Conn. He is vice-president and trustee of Indian Mountain School, Lakeville; member of the President's Visiting Committee, Department of Humanities, M.I.T.; and an officer in the American Guernsey Cattle Association, Peterboro,

N.H. Nice going, Sam! . . . From Hynes Chemical Research, Inc., Durham, N.C., where he is Director of Fluorine Research, **Lucius Bigelow** writes a delightful letter. (It certainly was good to see him again, looking and feeling so fine.) "I want to thank you so much for sending me the picture of myself receiving that famous gift of 'lunar opalescence' at the wonderful dinner on Cape Cod. Of course I was happy and smiling, for who could be otherwise on such a wonderful occasion. You may be assured that the contents of that package were duly and truly consumed, but of course not by me! Instead, I gave it to our two vice-presidents, so that the climate at our plant might always be of the best. I have brought the bottle home as a souvenir of our wonderful day. It is still filled with that positively delicious odor, which is all that can be preserved for posterity. I think that our reunion was a most satisfying and rewarding occasion, and I shall always be thankful that I was able to be there also. As possibly you may have realized this required a considerable effort on account of my greatly restricted vision. I think that the attendance at our fiftieth reunion and the wonderful contribution we have made to the welfare of M.I.T. admirably justify our slogan of '1915—The Class Supreme.' I send to you one and all the very best of good wishes." . . . **Ken Boynton** wrote: "I am sure all who attended our Reunion enjoyed a good time." . . . With some colored slides and prints, **Alton Cook** wrote: "The print of **Mary Rice** and you is an excellent shot and the one of Course V is also good. (Alton sent copies to the Course V group.) Please point out in the Notes that Course V had the highest percent attendance of those living, in any course (see below). A sad note—**Sidney Dodd** died last summer in Newark. He was one of our original group in Course V but failed to graduate with our class. He considered himself a '16 and I could never get him to come out to any of our '15 N.Y. dinners. I have been quite close to him and his wife these many years and it is sad to lose a good friend as well as an M.I.T. man. Our 50th was certainly grand and glorious and it was well organized thanks to you and the others on the committee. My best regards." . . . From South Portland, Maine, **Alan Dana** reports: "Since I got back I have been having a bout with four doctors. They would love to play marbles with my gall stones. At present they have taken 18 lbs. off me and I feel lousy. If you are in Maine, would be glad to see you." Good cheer Alan, for a quick and complete recovery. . . . **Ellis Ellicott**, Baltimore: "We certainly did have a great time at our Reunion." . . . **Reggie Foster**, Lowell: "It was a wonderful Reunion and proves the slogan 'The Class Supreme.'"

Doug McMurtrie and his family left the cold of Berlin, N.H., about the middle of October for their annual trip to Florida. Ah me! . . . **Hank** and **Virginia Marion**: "We are fine and hope you all are." . . . **Bill Spencer**, Baltimore: "I have just returned from a busy three days at Atlantic City where Region 3, Boy Scouts of America had their annual con-

vention. We had a nice time and a fine group of men from Virginia, Maryland, Delaware and Western Pennsylvania. I shall always remember our 50th Class Reunion as one of the best and greatest joys of my life. We the 1915 Class owe the Committee and especially you, our eternal gratitude for making the plans and arranging our days so well. Thanks a million. Best regards to you and Fran."

... One of our admiring reading public, Edna Stubbings, wife of Frank Stubbings, '27, wrote from Louiseville, Quebec: "We have received the July issue of Technology Review and that reminded me I was going to write to you sometime ago but just never did get around to it. Azel, I think you do a marvelous job as secretary of your class. I am sure it is because of your efforts that your class is so active. Keep up the good work! Ken Johnson is really remarkable, isn't he? We were pleased to read about him in this issue and to know he hasn't lost his sense of humor. We received a note from them at Christmas time but no mention of their health. If you ever get up this way do drop in and see us." Thank you, Edna, for the note and praise. Frank and Ken were associated together at the same textile mill in Connecticut years ago. ...

Speed Swift, Windy Acres, New London, N.H., "I guess I have lost a lot of my 'Speed'. I should have written long ago about pictures. I received the group picture. It came out very well. Then there were the four copies of our table at the Saturday night dinner. They came in good shape and I have sent along the three to the others. What do I owe for these? Have been busy since the glorious 50th but otherwise just lazy and indolent, so have neglected writing you (and others). Regards to Fran. If you folks are up this way, be sure and drop in." ...

Ray Walcott, Cranford, N.J.: "It was 'a good show!' But why not—with the good crew you had to help you. We (including Ruth Pollard) all admired and enjoyed what you did to make the occasion so memorable. There were, for me, so many 'after fifty years' renewals of acquaintance. These were treats. And like the others I have enjoyed more frequently in recent years, these meetings become enriched as we age, and find acquaintances can be friends! The impulse, when back home, is to write to each one—to express again the pleasure of his presence. For one of us, that could be presumptuous—and the daily routine with time passing lets the impulse fade. You, properly, will be expressing our unwritten thoughts—of appreciation of the pleasures provided by the company of Classmates who, surprisingly, have turned out to be the real nice people one likes to be with."

On July 1, **Fred Waters** was elected Life Member President of The North Shore Council of the Telephone Pioneers of America. Congratulations, Fred and success in your position, which is an honor and tribute to you. ... One of the most sensitive issues at the Peterborough (N.H.) Town Meeting in March was the question of improved communications for the police department. **Pop Wood** is on the committee to make a study of this problem for the community, a com-

mendable civic interest for Pop. ... One afternoon this fall I had a pleasant visit with **Bill Smith** in his nineteenth story apartment in one of Boston's new high-rise buildings. He has a fine view up the Charles River to M.I.T. and for many miles all around suburban Boston. ... During the summer, at about the same time, three classmates were laid up, each with a fractured foot, **Jac Sindler**, **Harry Murphy** and **Herb Anderson**. I hope this is not contagious! ... In Chicago in October, at the annual convention of the American Association of Textile Chemists and Colorists, I met **Bob Bonnar '27**, **Frank Stubbings '27**, **Mannie Brinbaum '30**, **Sid Edelstein '32**, **Freeman Fraim '32** and **Ernie Kaswell '39**. There were probably other M.I.T. men there. In our class, members of the association are **Alton Cook V**, **John Dalton X**, **Ralph Hart X**, **Al Sampson V** and myself. On the way back East, I spent a weekend with **Ben Neal** in Lockport, N.Y. Ever the gracious and generous host, Ben gave me a gay whirl and it was wonderful to be with him again, reliving the fun of our Fiftieth and reviewing the magnificent job he did on our Fiftieth Fund. **George Easter XIV** and his wife spent an afternoon and dinner with us and we had a small reunion on our own. ... In answer to several requests and the boast of Course V that they had the largest percentage of living course members (not graduates alone) at the Reunion, I give the following figures. This is at the risk of starting a Course feud: Course I—35%; II—27%; IV—23%; V—45%; VI—37%; X—37%; XIV—83%. Course XIV wins with five of their six living members present.

It's now sad to have to report the passing of more classmates—always a hard loss to us. ... **Thayer MacBride** died August 17 in Hingham, Mass. Because of a long siege of poor health he had retired from business prematurely to rest at home. I talked on the phone with him regularly and Fran and I and some of our classmates had some pleasant visits with him and his lovely wife, **Darthea**, at their pretty house. Because of setbacks in his health, Thayer did not return for our Senior year, but he had been active in athletics on the class relay and basketball teams. Before entering M.I.T. in September 1911, Thayer attended Chauncy Hall School in Boston. He recently had retired as President of Stetson Shoe Company, South Weymouth, Mass., and previously he had been President of N. B. Thayer Shoe Co., Rochester, N.H. He was the first President of Kiwanis in Rochester. During World War I he was a First Lieutenant and a pilot in the A.E.F. He leaves his wife, Mrs. **Darthea (Heald) MacBride**; a son, **Edwin T. Jr.** of Braintree; two daughters, **Miss Thais MacBride** of Fort Lauderdale, Fla. and Mrs. **Robert O. Hoss** of Hingham; and a sister, Mrs. **Marjorie Heald** of Hingham. ... From Philadelphia, **Henry Daley** notified me that **Ed Whiting** passed away on October 12 in the Bryn Mawr (Pa.) Hospital. **Henry**, **Herb Anderson** and **Sol Schneider** attended the services to represent our Class and **Obie Pyle '16** was with them. We'll all miss Ed, who was

active in the local Philadelphia Tech Club and regularly attended our annual Class dinner in New York and our five-year reunions. Even though not in the best of health, Ed was at our fiftieth. After 35 years as a sales engineer with Westinghouse Electric Corporation, Ed retired in 1957. He is survived by his widow, the former **Helen Foster**, two sons, **William B.** and **Richard A.**; two daughters, Mrs. **T. Dexter Lenci** and Mrs. **B. F. Brandon**; 14 grandchildren and a sister. ... **Tom Tolar** died October 24 in Belmont, Mass. Some of you may remember that he and **Wink Howlett** were married to sisters. ... From Holbrook, Mass., Mrs. **Audrey M. Pritchard** wrote: "My father, **William E. Ash** died November 18, 1964, at the age of 81. His heart had been giving him more and more trouble these last few years, and—much to his disappointment—kept him from attending Alumni Day the last two years. He had firmly intended to go this year, in a wheel chair, if necessary. He was a very quiet man, but extremely proud of being an M.I.T. alumnus. He read extensively on a wide range of subjects, but enjoyed none more than the reports of M.I.T.'s varied research and activities. Just recently, I found a rough draft outline of what he apparently was considering as a letter to you touching on the highlights of his last fifty years. The following is quoted verbatim from his pencilled notes: 'After leaving Tech in '15 and working as a draftsman for architects in Boston and Maine, **Fred Coombs**, now deceased, invited me to join him in partnership as architects and structural engineers. We were getting fairly well established when the first World War clamped down on all building other than that for the Government, and I found myself in the Engine Drawing Room of the Bath Iron Works, busily engaged on a program of eleven destroyers. Unfamiliar with ships of any type, I was surprised to learn that the 'floors' under the Engine and Boiler Rooms were wide plates, placed vertically with an angle riveted to the top edge. The destroyers built, it was architecture once more with two New England firms. The depression of '29 found me looking for a job in New York State where the Central School Systems were booming. But, after a few months' work in Cortland and Ithaca, the state cancelled all new work, and for over three years, I really got the 'feel' of what it is like to be out of a job. In 1935, I was given an opportunity to work for the shipbuilding division of the Bethlehem Steel Co., at Quincy, Mass., where I remained until my retirement in 1957.'" ... We have written to the families of these departed friends and classmates to express the sincere sympathy of the class for their sad loss.

Larry Landers and **Bur Swain** are again setting up the annual New York Class dinner at the Chemists' Club there on Friday, January 28, 1966. Plan to be there and see yourself in reunion pictures. We have a wonderful collection of about 100 colored slides taken in Cambridge and at Coonamessett—better not miss it! Next month's column will give you the play-by-play of our big Class Dinner

here on October 29, at the M.I.T. Faculty Club. Meantime, all the best for good health and good cheer and many thanks for all you've done to "help Azel."—**Azel W. Mack**, Class Secretary, 100 Memorial Drive, Cambridge, Mass. 02142

'16

All thoughts seem to be directed to June and the 50th Reunion and **Steve Brophy**, Reunion chairman, and his bubbling committee have outlined a tremendous program starting with early registrations at McCormick Hall on Thursday afternoon, June 9. Our president, **Ralph Fletcher**, advises that it is probably dangerous to attempt listing all the things that are to happen for fear of leaving out one or two sparkling items. However, a list of highlights may not be out of order—details will be sent to all through the mails. On Friday morning, June 10, the Class of 1916 has a prominent place in the academic procession with cap and gown (and will-it-be a Master's or Doctor's hood?) furnished to each one of us, to the Graduation exercises where 16ers will be seated on the platform with members of the Corporation and faculty. Wives, and possibly two or three husbands, and our guests will be seated in a group. Then at noon, the Class of '16 and wives (or husbands) will be special guests of the Institute at the Commencement luncheon in the Great Court. There we'll all hear our own **Van Bush** speak for our Class to the graduates and assembled guests. In mid-afternoon we leave by automobile or busses for the reunion at Oyster Harbors Club, Osterville, on Cape Cod. And there we will stay for two whole days at what promises to be the biggest reunion of all. A later issue will outline some of the things that will take place at the Cape—at a spot we have used many times in the past, always with a desire to return for more. On Sunday afternoon, June 12, we return by automobile or busses to McCormick Hall in Cambridge. And as **Steve Brophy** points out: "President and Mrs. Stratton have invited our Class to be their guests for cocktails in the garden of the President's house on Memorial Drive. This is a first!" Then on Monday noon will come the Alumni Day luncheon in the Great Court when our ski-loving president **Ralph Fletcher** and Class Gifts Chairman **Joe Barker** will speak for the class. And for those who make the occasion complete, we'll attend the Alumni Day dinner in the Rockwell Cage at 6:30, preceded by cocktails and canapes, courtesy of our 50th Reunion chairman, and at 8:30 an outstanding program (details not yet announced) in Kresge Auditorium. A special section will be reserved for the Class of 1916 and ladies, with Dr. and Mrs. Killian, President and Mrs. Stratton with our group. And as **Steve** points out further: "The Institute has placed at our disposal, free of cost to us, two main dormitories, McCormick and Baker Halls. Accommodations will be available Thursday night, June 9, Sunday night,

June 12, and Monday night, June 13. Included will be breakfast on Friday, Monday and Tuesday mornings as guests of the Institute."

As you have all received the mailings with the names of the many who are coming to the Reunion, we will not list any figures we have now (Nov. 12), for they will be out of date by the time this is published in the Review. But here are a few of the notes from individuals in response to the first mailing. **Ted Strieby**, "Sounds very good;" one classmate, "To what extent will a drop-out such as myself be able to participate in all of these functions?" and **Steve's** reply, "100 per cent;" **Paul Duff**, "I can hardly wait;" **Freeman Clarkson**, "Looks great;" **Rudie Gruber**, "May the good Lord make it possible!" **George Petit**, "Sure will attend the big 50!" **Brad Curtis**, "Because of a heart attack in '63, doctor advises against attending—my best regards to the Class;" **Allen Giles**, "You have an excellent committee and a top-flight program;" **Stewart Keith**, "My wife has her 50th at Wellesley so we will see how the two dovetail;" **R. F. Hart, X**, "Had a major operation last October—not so spry any more—good luck to all and have a good time;" **Mark Lemmon**, "Looking forward to it;" **Wes Blank**, "My wife and I are surely looking forward to the 50th;" **Vert Young**, "An excellent program;" **Cy Guething**, "My slow speed in answering is not commensurate with my enthusiasm;" **Ed Williams**, "Health situation prevents;" **Stew Rowlett**, "Can hardly wait."

If you have not returned to Boylston Street for a long time, we have some interesting comments on how things look now from **Walt Binger**. As a member of the Executive Committee and Board of Trustees of the National Audubon Society, he attended a meeting in the Sheraton Boston hotel early in October. Here's what he says: "For those of you who have not seen the changes in the region close to Copley Square (and I had not) I can only say that it is unrecognizable. The Prudential Insurance Company has built a huge tower with a two-level terrace occupying a block along Boylston Street. This also includes the Sheraton Boston Hotel. I decided to take a quiet walk in order to orient myself. Using the 'Copley Plaza' Hotel and the Old South Church as points of focus, I walked down until I found myself where I judged the red brick Engineering A, B, and C Buildings had stood. Even this place looked strange because of radical changes in the Back Bay Station. I have been to Cambridge dozens of times since we graduated (my brother, Dr. Binger, lives there) but I have always driven around Boston. I have never once until now carefully walked over the whole neighborhood from the insurance building on the site of Rogers to the extremes of our daily beat. It took me a little while but gradually it all came back." Try it, says **Walt**, when you come to the 50th! . . . And another thing, as a 16er, you'll want to look over the new Center for Materials Sciences and Engineering. M.I.T. dedicated this new center on October 1st and named the building for Vannevar Bush '16. As re-

ported in the November issue of The Technology Review, **James Killian** announced the honor for **Van Bush** as "a salute to the colleague who has made an immense contribution to science and engineering, to M.I.T., and to the nation."

Joe Barker keeps overly busy in his current difficult job as Reunion Gifts Chairman, and he urges that each of us read most carefully the special message that he sends to us. Should you wish to discuss anything with him, you can usually bank on his being present at the next monthly New York Class of 1916 luncheon at the Chemists' Club, or call him in New Rochelle, N.Y. . . . Perhaps you saw the article in the September 1965 Reader's Digest on "They Rebuild Broken Faces," which was condensed from the May 2, 1965 This Week Magazine. If not, you really should go back and read it—the remarkable story of plastic surgery and what the Society for the Rehabilitation of the Facially Disfigured has done to give hope to disfigured persons. This is an organization of laymen who in 1955 "sponsored a treatment center where a large number of victims of extreme disfigurement could benefit from the combined skills of the many different kinds of specialists necessary for reconstructive surgery." . . . And now **Dr. John Marquis Converse**, a well-known plastic surgeon, is director of the Institute of Reconstructive Surgery, a unit of New York University Medical Center and Professor of Plastic Surgery at the New York University School of Medicine. And the article tells of **Steve Brophy's** part of this work thus: "**Thomas D'Arcy Brophy**, retired advertising executive who has served as the Society's volunteer president since 1956, points out: 'Although plastic surgery was established as a surgical specialty 25 years ago, the general public, unfortunately, often thinks of it as being devoted essentially to cosmetic improvement.' But desperate cases, rather than women wanting a face-lift, are the people the Institute seeks to help. . . . From its first days under **Brophy's** leadership, the society has sponsored the training of young surgeons in reconstructive plastic surgery, in the hope that these doctors will open similar clinics elsewhere and help to meet the need for this type of treatment. Supporting research leading to advances in plastic surgery—particularly in tissue transplantation—is also a society project. Today, in the course of a year, the Institute's doctors perform about 1300 operations in three hospitals where the Society maintains its facilities." A wonderful story, **Steve!**

Among the several active '16 architects is **Charles Cellarius**, who is still practicing in Cincinnati—now mostly university work and a good number of churches. Recently, associated with **Harley** and **Ellington**, he did "a really interesting insurance building in Cincinnati for the Union Central Life Insurance Company." He notes: "I still get abroad—Germany and Greece last year—although since the death of my wife in 1963, I have traveled with my sister. One of the universities I have worked for has been the College of Wooster, where our own **Robert E. Wilson** was Chairman

of the Board of Trustees." Charles plans to be at the 50th and it is beginning to look as though a majority of the living members of Course IV will be there. . . .

Theron Curtis answers our questionnaire questions crisply. 1. Been doing: "Had a wonderful summer with family at Falmouth. The drought stopped the grass from growing so my work was light." 2. Where going: "Now for a week in White Mts. at Whitefield." 3. Whom seen: "No one." 4. Grandchildren: "One new great grandson; this makes two." 5. Philosophy: "Hope we can be with you at the 50th, provided of course the World doesn't blow up before then. Remember the good Old Republican Party? Let's revive it sometime."

Irv McDaniel reports that he and Kay are still delighted with their living conditions in Newport Beach, Calif. Speaking of memories, he writes: "I remember in 1916—the 50-year class parade at the Nantasket Beach—and I never saw such old and crippled men in my life and wondered why they bothered to live. I put on the 1895 stunt (25-year class) and I thought they were very old men!! Heigh-ho!!!" Irv also mentions he had heard recently from Capt. (U.S.N. Ret'd) **Harold Lerner** in Long Beach, Calif., "one of the best loved officers when he was on duty." Says that Harold had read of the Irv-and-Kay tour of Europe in the Class Notes in the Technology Review. Harold's son Thomas is with the Air Force Overseas Teaching Staff 7240 Support Squadron, located at Oslo; the Larners had intended to make an indefinite stay in Europe using Oslo as their headquarters, but had to give it up because of a health condition. Irv also notes: "A friend of ours has a protege on the concert stage (cello). We heard him the other night and his accompanist was Howard Wells—the son of our Howard Wells who has been dead for years. Howard and I were raised together in L.A. and his son is a marvelous pianist." . . . **Obie Pyle** writes of recent contacts with Venaldo Harshbarger and Harold Fuller in reference to good times ahead at the 50th reunion. He notes that V.H. is building superintendents of the Pennsylvania Turnpike Headquarters at the Harrisburg east exist. . . . **Howard Claussen**, after "slaving" for some five years, hopes soon to sport on his car and boats the three gold stars of a "Navigator." "Just a few review sessions and the final exams," says he. Further: "Uncle Jim' Evans thinks he is good at math, but I bet I could fox him with spherical trig, logs, antilogs, haversines (both natural and log haversines) and all other phases of celestial navigation that I have had to master!"

Phil Baker, commenting on the 49th Reunion picture, says: "One picture equals a lot of conversation and tells a lot." He notes that the Michigan group has not been very active but he is sure Cy Guething and he can encourage a goodly representation at the 50th in June—they "shall surely try." We are glad to know that Phil is quite himself again following his serious illness of a year ago—he and Thelma were very much missed at the 49th last June. . . . In mid-October **Jack Burbank** reported good recovery

from an operation in September: "Moderation in exercise is in order and although I can drive my car, the doctor says that if I have a flat—don't change the tire myself! I shall pitch and putt for the next month and see later about the longer shots." . . . Also from Cape Cod comes a calm message from **Don Webster**: "Life on Cape Cod for Nell and me continues tranquil and pleasant. I have no cute philosophical tidbits for you at this writing. For cud-chewing this ruminant classmate dwells constantly on the world's sad lack of population controls, and the messes, economic, political, and military, arising therefrom."

Stew Rowlett wrote late in October that they had been enjoying the **Val Goodings**, who moved to Clearwater from Longmeadow, Mass., a year ago, and that Val had fully recovered from an operation some weeks earlier. Stew is still painting portraits as a hobby, not professionally. And we know how highly Duke Wellington regards Stew's work, as reported in November! Stew says he's still healthy, visited his daughter in Maplewood, N.J., in September and spent two days in New York City going through eight galleries. . . . And from Val Gooding himself we have a complementary message: "I can think of better years than this has been. I lost a grandson by cancer the first part of the year, and this summer made two emergency visits to the hospital. They finally decided to remove the gall bladder and so I am feeling better now than I have for a long time. Anyway I beat the President. Eleanor and I have enjoyed renewing old friendships with Helen and Dick Rowlett. We like Florida and have no desire to return to the land of ice and snow." . . . A letter from Pearl (Mrs. **Bob**) **Wilson** in late summer, describing the awful experience of living for weeks (later: yea, months!) in an apartment being renovated for air-conditioning, has proven most helpful to your secretary and family. Dust, and plaster, a large hole drilled through the plaster and brick wall in each of seven main rooms, furniture huddled in each room under a plastic sheet, practically "living" in a bathroom, workmen crawling in and out of everywhere, more dust and more plaster—this was a sufficient reminder of our home enlargement in 1935 to enable us to decide quickly and definitely that we would not go through the process of converting our home to electric heat. Graphic descriptions surely aid decision making!

Ken Richmond, thinking ahead about the reunion to come, has some old memories of Boston and Cambridge. In the senior year, Ken was Chairman of the Mechanical Engineering Society and "secretary" of Steve Brophy's committee to dedicate the New Buildings in Cambridge. Then in 1917, by joining the Navy, he returned in the Navy's first school for line officers. He says: "For four months I slept in an upper bunk in a Tech classroom, rose with the bugle, ate in the cafeteria, and every Sunday marched across Mass. Avenue bridge to the New Old South Church in heavy blue uniform and leggings. We sat like ramrods and listened to interminable sermons by substitute pastors who mistakenly at-

tributed the posture to their own powers of persuasion." As for now, Ken says: "I continue to work full time at Abraham and Strauss, a department store complex based in Brooklyn. I have been a vice-president since 1930, controller, then treasurer, and now Executive Vice-president—which is a kind of senior citizen's title. I am also a vice-president of Federated Department Stores, Inc., of which Abraham and Strauss is a division. (He has been listed in Who's Who of America since 1938.) Mrs. Richmond and I have four children and 17 plus grandchildren. God has been good to me." . . . **Duncan Owler**, retired president of the Fall River Electric Light Company, writes: "There is an old adage that 'no news is good news' and that fairly well describes my situation since I last wrote you, and if there is any departure from that you can be certain I shall write you about it. I hope to see you in person before long, as half a century is a long time, and in another half century our eyes may not be 'in condition' to respond to light rays." . . . **Arvin Page** notes that a year ago last January, he and Claire went down to the Florida keys to see if the sun there would do his arthritis any good, "but it didn't." He says: "While there we saw a good deal of **Ed and Mary Parsons** who have a house on Plantation Key and quite a bit of **Judd Vile** who had a house about a mile away. As you know Judd had been living there the year 'round for some time. Last spring he decided he wanted to return to Connecticut, so he put his house on the market. He sold it on August 13 and left. On September 8 Betsy came to call. He reports that while she left the house standing she washed outside everything that had been inside (including a hot water heater) through the openings where doors and windows had been. Pretty good timing, wasn't it? Since returning from that Florida trip we have stuck pretty close to home. It's no fun traveling with my creaky joints. I hope I can make it to the Reunion next June but this is by no means a certainty." . . . We have at hand the Sunday, September 19, order of service of St. James Episcopal Church in Cambridge, and who do you think gave the sermon for this service? None other than our own The Reverend **Edward Weissbach**! After retirement from Campbell Soup Company a few years ago, Ed was ordained a priest in the Episcopal Church in New Jersey, and later became Rector of Christ (Episcopal) Church in Somerville. He was there until March 1964 when again age forced him to retire. But you see he still carries on in a very real way!

Writing from Charlottesville, Va., **Wes Blank** has something of unusual interest: "While abroad this past summer, I had the honor of placing memorial flowers on the large U. S. Cemetery outside of Florence, Italy. There 4202 unknown U.S. soldiers are buried. Likewise, in Mainz, Germany, I was chosen to operate the 500-year-old Gutenberg Press, receiving as a memento the printed sheet, a page in Latin and old script from the Epistle of St. John. As to personal news, I have no glamorous, exciting, or noteworthy achievements to relate as com-

pared to many of my classmates. We live a complacent life in our 160-acre estate overlooking the Blue Ridge Mountains and spend much time at our cottage at Lake Louisa (Va.) when not traveling abroad or visiting my daughter in Tennessee and my son in North Carolina." . . . One of the 16ers we were all looking forward to seeing at the Reunion and who had been planning on it for some time, was **Joao Correia** of Lisbon, Portugal. But in early November we received the sad news from his widow of his death in August. We are reproducing her November 9 letter here: "I must write and let you know of the peaceful passing of my husband Joao Nunes Correia on the 30th of August. He received your letter of the 15th of August and was most enthusiastic with your plans of the Commemorations at Cape Cod for the Big Reunion next June. We were very happy in planning and looking forward to our trip to America when the sudden and fatal heart attack took him away so swiftly without warning. God did not permit that we participate in your Reunion. Enclose herewith postcard which please forward to the Committee. Yours sincerely, Irene Nunes Correia." We plan to include information on J.N.'s career in a later issue. . . . As you know, our class has monthly luncheons in New York at the **Chemists' Club**, 52 East 41 Street, just a block from Grand Central Station. These are held at noon on the Thursdays following the first Monday of each month, often jointly with our younger friends of the Class of 1917. Those at the November luncheon included Joe Barker, Walt Binger, Jim Evans, Rudie Gruber, Herb Mendelson, and Francis Stern. . . . The column comes to a close with two reminders: (1) to keep those Reunion dates June 10-13 wide open, and (2) to keep in touch with any others in your area so as to assure good representation at the ceremonies and good times in Cambridge and Osterville. We repeat the old refrain: to keep the little old column full and interesting, write a little but write often to any of your Class officers—**Harold F. Dodge**, Secretary, 96 Briarcliff Rd., Mountain Lakes, N.J.; **Ralph A. Fletcher**, President, Box 71, West Chelmsford, Mass.; **Joseph W. Barker**, 45 Beechmont Drive, New Rochelle, N.Y.; **Hovey T. Freeman**, 45 Hazard Avenue, Providence, R.I.; and **T. D'Arcy (Steve) Brophy**, 470 Park Avenue, New York, N.Y.

'17

As these notes are being written up it is Armistice Day, or, as it is now termed, Veterans Day. May we have said a prayer for our classmates who have given their all. Somewhat reminiscent of that day, the main topic of the day, in and around New York City, was the black-out of the 9th of November. It brings to mind also the Assistant Secretary's undergraduate days, when all the lights suddenly went out in the Electric Lab, but it happened in the day time. On the day following the

black-out, the M.I.T. Alumni Center of N.Y. had scheduled a dinner meeting to learn all about the water shortage. It was called off, however, as little Ole New York rather expected a recurrence, and most businesses and stores closed in the early afternoon. Even the New York Stock Exchange did not open until 11:05 a.m. Now, it would seem appropriate that they have an evening scheduled for the big question of the day, "Why did the lights go out and stay out." Any inquiries received, will be referred to our utility executive, **Lucius Hill**. In deference to our New Jersey Utilities, which are faultless in their service, perhaps the real reason for their good record, was that I exercised my emergency unit the day before the black-out. Said unit was purchased during the power failure of 1955, and has not been needed since.

Immediately following the annual Alumni Conference in September, the Alumni Seminar was held at the Institute. Those of the Class attending were, Mr. and Mrs. **Bill Dennen**, Mr. and Mrs. **Ralph Ross**, and our president, **Al Lunn**. The schedule was very interesting, but so far no report has been received from the participants as to the educational benefits received!

The next in line at the Institute was the dedication of the Materials Science and Engineering Building on October 1. As the Assistant Secretary could not attend, he passed the invitation on to **Ray Stevens**, who apparently did not pass it on to anyone else, so no report here either. However, while at the Alumni Conference, the writer inspected the new building and it is a very real addition to the campus, and one that should serve for years to come. The booklet entitled "A Symposium on Materials, Science and Engineering" shows how far we have come since 1917.

The 48th reunion, our second of the foliage season, held on October 7, 8 and 9 at the Publick House at Sturbridge, Mass., was better attended than the previous interim reunion. Now the question is, where and when will be the 49th! Of course the 50th is all set for Chatham Bar on the Cape. It has been brought to my attention that McCormick Hall, the so-called Waldorf-Astoria Women's Dorm, has been made available to the 50th Year Class, for such use as may be wished. For instance, we can have our reunion at Chatham as planned, yet use McCormick Hall for the pre-Chatham and Sunday night get-togethers. Any suggestions? Those attending the 48th were the Walter Beadles, Dud Bells, Penn Brooks, Bill Dennen, Stan Dunning, Bob Erbs, Heinie Gartners, Loosh Hills, John Holtons, Bill Hunters, Ken Lanes, Stan Lanes, Dick Loengards, Al Lunn, Ray Maeders, Win McNeills, Ray Stevens, Alvin Sullivans, Ham Woods, Dix Proctors, Baching it were Ray Brooks, Jim Flaherty, Don Severance, honorary, and John De Bell, who it was reported stopped off on Thursday while passing through. Then on Saturday the Tubby Strouts, and the Tom Meloy's joined us at the luncheon and dedication ceremonies of the new Student Center at the Insti-

tute. The Institute and the Class of '17 were honored to have Mrs. Conchita Lobdell up from Mexico for the festivities. Her smiling presence at the 48th Reunion was most gratifying. On Friday evening Don Severance spirited her away to the Brooks' apartment, but she re-appeared at the head table during the luncheon in the Puerto Rican room of the new Student Center, for the formal dedication of the Lobdell Dining room there. After the luncheon a podium was set up outside on the terrace entrance of the Center for the official dedication ceremonies of the Building as the Julius A. Stratton Student Center. As a gesture of recognition, the Class of '17 was seated in a group, at the left of the speaker's platform. After the dedication there was a general inspection of the Center and its facilities. I quote from one of Win McNeill's highlights of the Reunion, "Trip to the new Student Center and a chance to see the new Lobdell Dining Room. The transition in student facilities from the old Tech Union in Boston, to Walker Memorial, to the new Student Center was interesting to contemplate. I hope the students appreciate their new quarters including the shops in the basement."

Sturbridge treated us royally with the good old New England fall foliage; and the bar at the Treadway House, preceding the dinner at the Publick House, was apropos and well enjoyed. Thursday afternoon it was reported there was a practice round of golf, but the only card turned in was on Friday morning when a threesome of Ray Stevens, Ken Lane and Dix Proctor participated on the beautiful course at South Sturbridge, namely the Cohasset Country Club. The scores recorded were rather remarkable, one broke 100, another, one over par, and Dix was chauffeur for the last nine holes for Ray. On Thursday evening activities began at the bar promptly at 5:00 p.m. and progressed famously until 7:30, interspersed by occasional renditions on the piano by Jim Flaherty. After a sumptuous repast, our Honorable President arose and called for a few words from those present. After reading the following remarks, if there are any supplements or compliments, or complaints, please send them to Win McNeill so that he receives them before February 1, when he resumes his editing. At that time I will be en route to Africa and beyond reproach. Our guest of honor, Conchita Lobdell, advised she was re-adapting to life in Mexico and waiting for visits from friends of M.I.T. She has seen, this past year, the Bill Dennen's, the Tom Meloy's and the Lunn's, who attended the fiesta in Mexico City. She still greatly enjoys the tape recording given to Lobby on his retirement. . . . **Heinie Gartner** reported that the weather was so good on the Cape that he and all the grandchildren really enjoyed the water and swimming. Also that he is still busy antique-ing. . . . **Ken Lane** is dividing his leisure between New Hampshire and Florida, and the year has been reported uneventful. . . . **Alvin Sullivan** reports that he and Olive toured westward during the summer, crossing into Canada at Messina and driving the Trans-Canada Highway to the

west coast. He reports that traffic density was about three per mile. On Friday evening he showed colored slides of the trip and they were beautiful. Statistics: food and accommodations wonderful, gas every 10 miles, scenery north of Lake Superior gorgeous. Returned via Yellowstone, Bad Lands, Michigan and home, and spent the rest of the summer repairing clocks. . . . **Stan Lane**, still President of the New England Baptist Hospital, recently greeted President Johnson on the 5th floor of the Hospital when he came to visit Ted Kennedy, who incidentally, he advises, was a very fine patient. The Secret Service kept Stan from seeing the President, until he showed his union card. The hospital also had played host to President Kennedy. Stan took his three grandsons on a 21-day safari in Africa and shot some 5000 feet of 16mm movies. Incidentally, Friday evening he showed one reel and with the use of his zoom lens, he really had lions and elephants coming at you, at such speed that one felt like running for cover. . . . The **John Holtons** spent most of the summer entertaining grandchildren. He took a freighter cruise through the Caribbean and was marooned for a while in Trinidad due to the strike. . . . **Bob Erb** advises that at last he is retiring. He is living in New Canaan, Conn., and summers at Winnepesaukee Lake; he contemplates a trip this summer to the North Cape. . . . **Bill Dennen** spoke of having made his 10th attendance to the Mexican fiesta, and upon his return home, feeling A-1, he went in for his annual check-up and was retained in the hospital for an operation. He seems fully recuperated. . . . The **Win McNeills** tripped to the Middle East with a seven-day cruise on the Aegean Sea. I'm glad to report that Win appears to be fully recovered from his heart attack in June. . . . **Ray Meader** merely reports he is at home in his apple orchard; he brought several bushels to prove it, and the class can vouch for the quality. . . . **Bill Hunter** advised that he still can't stop peddling and is now traveling in the U.S.A. for a better and positive machine feed. As of November 3, he was off for California via Florida, with Doris as traveling secretary. . . . **Ham Wood** states he is still working every day at High and Federal Streets in Boston. He spent a few weeks at Marthas Vineyard, and is resting otherwise. . . . **Penn Brooks** is managing a farm of 150 head of cattle, plus many grandchildren, was salmon fishing in Canada, bone fishing in the Caribbean, and went to Mexico and Guatemala. . . . **Walter Beadle** reports spending a weekend in Annapolis entertaining grandchildren. He visited the Grand Tetons and highly recommends the Jenny Lake Lodge, and a trip down the Snake River, which was nice, but not exciting. They had a week at Glacier National Park, which thrilled them much. . . . **Ray Stevens** advised that **Brick Dunham** sends his best, otherwise he reports a quiet summer. . . . **Ray Brooks** says they spent a month on Cape Cod. He has been retired for five years and regrets that he did not do it five years earlier. Claims something doing every single day and not time enough to do it. . . .

Jim Flaherty claims that architecture has gone to the dogs, since the "last good architect died a few years ago." Jim sure does not see eye to eye with the late Le Corbusier! . . . **Dud Bell** was inspired by the foregoing outburst to become poetic as follows: "When earth's last picture is painted, and the youngest critic has died, we shall rest, and faith, we shall need it, lie down for an eon or two, till the Master, Jim Flaherty puts us to work anew." Jim replies, "You can make your own speech on Le Corbusier's work, but had he been my draftsman, I would have fired him and that goes for Picasso also!" . . . **Stan Dunning** reported he had a very pleasant summer with some visiting and a wedding or two. . . . **Al Lunn** spoke of being at the University of Colorado as previously reported, and that otherwise he was very busy and was baching it for most of the summer, while wife Sue studied with Myra Hess, the noted pianist, in London. . . . **Dud Bell's** remarks can perhaps best be covered by a letter to Stan Dunning as follows: "On the way down from Binghamton I shot off the expressway and dropped in on Bill Dennen. His farm is about five minutes off the main drag. We have had some trouble with health in the past year. Perhaps I was very foolish to tackle sailing in the Aegean Sea, alone with Helen at our ages, last year. The battle with the winds, etc., did no good, I am sure, but nothing happened until a few months later when I went down with some chest spasms—hardening of the arteries I believe. This is nothing new to everyone at 70 as a rule, and I truly saw it coming thru the years. Helen was hit more seriously by a ruptured disc, which we had removed. She is coming along fine now. We attribute her trouble to an auto accident when we got socked in the rear by a truck while standing still on a main highway. Meanwhile we seem to be back in the saddle, and I am not slowing down or changing my activities in business or otherwise. I enjoy the life on the road and with five factories liking my work, I am darn busy." . . . **Don Severance**, our honorary member of the Class, spent half the summer as an alpinist in New England, and the other half on the telephone, preparing for the 6th Annual Alumni Conference. He says that President Johnson was invited, but did not accept due to secret service problems. So much for those attending, and now for those who did not, but wanted to. . . . **Dick Catlett** writes, "I am afraid I have appeared uninterested by my failure to answer your letter regarding the Sturbridge Reunion of the '17ers. This is far from the fact, and at this late date I want to tell you how much I would like to be with you all. I have enjoyed very much the times I have gotten together with the classmates. I have completely recovered from the slight heart attack which kept me from the 45th. Except for an arthritic left leg, I have been in good health and spirits until about two months ago, when I developed an ulcer. The treatment is rather rugged. No liquor, no enjoyable food, daily rest periods, and no reading or talking about L.B.J. and his gang. I am thinking of instituting suit for damages against them. I am con-

fidently planning to attend our 50th." . . . **Frank Peacock** wrote, saying that he sincerely hoped to be able to attend—what happened Frank? . . . **Joe Littlefield**, the youngest father in the class, apparently could not find the time, as he reports being very busy transferring work to others. . . . **Art Keating** comments, "Extremely sorry cannot make it this year. Will be in Virginia at the time—very best to all." . . . **Walt Whitman** would surely like to be present, but planned to leave New England by mid September. . . . Stan Dunning made a call on **Ray Blanchard** in early October and reports that Ray had a stroke a year ago which paralyzed him badly. He has made a fine comeback, enjoys phone calls, and sends his best.

Just a note on the Alumni Fund. As of August, I note that '17 was 19th in the list of 67 classes for the 1965 Fund. From the November notes I see that class '15 Fiftieth contribution was over \$2,000,000. In talking recently with Joe Barker, Chairman of '16 Fiftieth Fund, he tells me they are shooting for \$3,000,000. This to cover the extra cost per student, as I understand present day tuition covers only about 50 per cent of the actual cost. It is hoped that the income from this fund will be sufficient to help meet this deficit. They plan for it to cover one student for each living classmate. These are indeed noble goals for '17 to shoot at. Ray Stevens is heading up the 50th Year Contribution for our class.

The surprise at our November luncheon at the Chemists Club in New York, was that '16 out numbered the '17ers, who were Dick Loengard, Bob Erb, Bill Neuberg, and Dix Proctor.—**W.J. McNeill**, Secretary, 107 Wood Pond Road, West Hartford, Conn. 06107; **C. Dix Proctor**, Assistant Secretary, P.O. Box 336, Lincoln Park, N.J. 07035.

'18

Many things deepen, both in quality and expression, as time goes by. Being the film chairman of the "Millburn Old Guard," a close-knit group of retired professional and business men, **Albert Walker** wrote to the Department of the Interior at Denver for the movie about Hoover Dam. In so doing he mentioned that he had worked for the Colorado Game and Fish Department in the summer of 1915 and 1916. As a result he was asked to write an article for "Colorado Outdoors" to be published in the Nov.-Dec. issue. With deepened memory, he tells how, as a game warden, he rode the range on horseback with headquarters at Glenwood Springs. The early part of the summer was devoted to the arduous task of stripping rainbow trout of eggs and sperm in the high, inaccessible, frigid country around Trapper's Lake. The product went by pack horse and railroad to the hatchery. Riding the range, one of his principal duties was selling fishing licenses. As a young man, Albert's father had driven a stagecoach in Idaho. The Colt 45 which had been used on that assignment now went along over the mountain trails of Colorado. Walker says, "With the car-

tridge belt filled with bullets, and the gun in a heavy leather holster, it was a real operation to get aboard a horse. Such a gun was nothing but a darn nuisance, and it kicked like a mule when it went off. To see a Western TV hero shooting the burning ash off a cigarette in the villain's mouth is mostly hokum. The second summer I carried a Colt automatic pistol in a canvas hip pocket. It was small enough and light enough to be both comfortable and efficient." At the end of the second summer he rode his horse to Denver so his father could sell the animal at a good price. He slept either in some hay mow or in his bed roll under the star pin-cushioned skies. Since he was riding cross country and wasn't exactly sure of the terrain, he found himself down a steep slope the horse would not go back up, and on the west side of a quarter mile, one track tunnel serving the Denver, Salt Lake and Western narrow gauge railroad. The only way out was through the tunnel. Once well inside, the tunnel was dark, the horse stumbled on the ties, and the train schedule was an unknown quantity. But farther down the track, in the college town of Boulder, was the girl Albert later led to the altar as he had succeeded in leading his horse through that tunnel.

During the last month, your secretary wrote eight, longhand letters, and made one toll call asking for contributions to this column. Only **Gretchen Palmer** took the time to deepen in expression. She writes: "Yes, I am out in the tall corn country and that is sure the correct name for it—corn everywhere. It is being harvested now. I have joined a friend I made in Buffalo, who is an orphan as I am; unmarried, no brothers or sisters, and no close relatives. We are living in a house that she owns. The reason for her choosing Princeville, Ill., is because she has a cousin of her mother, aged 86, living here. Our home is an old house Kay has done much to improve. We both have our furniture, we both have antiques, so they blend together as though they had always been together. One incident at first had us in an upset. I thought it was going to be easier on my dog to have him flown from Buffalo to Peoria but it turned out that Chicago was fogged in that day. He was put on the plane in Buffalo at 9 a.m. and was supposed to be here at 4:30 p.m. to be picked up by Kay at 5:30 p.m. on her way home from work. As it turned out he arrived in Peoria at 1 a.m. He probably went back to Buffalo and made another start because he couldn't land at Chicago. I drove out from Buffalo in two days. I am acting as cook and housekeeper while Kay goes to work each day. We are up at 5:30 a.m. and she is off at 7 a.m. to drive 32 miles to Pelsin where she is a chemist at the American Distillery. This means getting her breakfast and packing her lunch. Then in the evening I have dinner ready. I am doing as much relaxing as I possibly can because I know I have to get myself back into shape. I realize that I was pushing myself hard last year, perhaps too hard. I have time now to do some of the things I like to do, such as sewing. Also I am doing volunteer work for the office of the Episcopal Cath-

edral in Peoria. It is 20 miles away and quite a modern church, with a wonderful Day School connected with it. This of course gives me a chance to use my experience both in school work and church work. Later, I may get connections with such organizations as the A.A.U.W. and also the A.A. of Retired Persons which seems to have an active group in Peoria. It means 20 to 25 miles to get anywhere, but you get used to that."

The ripening and deepening of **Sam Chamberlain's** work has always reached for beauty of expression. "The World of Samuel Chamberlain," as seen in etchings, drawings, and photographs, was on exhibition at the New Britain Museum of American Art last October. Regardless of his choice of medium, Sam distills with pencil, camera, or steel point an interweaving of light and shadow which produces something clean and lovely. As we are all aware, many honors have come to him, among them a Guggenheim Fellowship. Both in Europe and America he has drawn, etched or photographed all manner of scenes, from a humble peasant house in Italy, to the historic cathedrals of France, and the Old Meeting house not two miles from where I live. . . . **John Woods McCausland**, who joined us in Mechanical Engineering his sophomore year, spent 30 years working for the Universal Oil Products Company, mostly as a chemical engineer. On Thursday, September 23, he died in the Evanston Hospital (Illinois). A native of Chicago, he lived in Winnetka, and was buried in McCausland, Iowa, where his ancestors had settled in 1850. Many things deepen, both in quality and expression, as time goes by.—**F. Alexander Magoun**, Secretary, Jaffrey, N.H.

'19

Russ Hubbard writes from Box 853, Pinehurst, N.C., "I got very tired of the snow, ice, late Springs and early Falls in Connecticut, so I retired here in January, '65. Now I have my golf twelve months of the year and a most 'reasonable' winter." . . . **Ervin M. Kenison** is in Bradenton, Fla., P.O. Box 301, retired from government civil service. He plays a lot of bridge, shuffleboard and some billiards. . . . **John J. Hanson** has been fishing on the Allagash in Maine this fall. . . . **Merritt P. Smith** was in Europe this summer for about seven weeks with his wife. He's feeling fine, has been retired for three years.

Karl and Allegra Rodgers interrupted their trailer trip to spend some time in Provincetown, where they have been modernizing their houses for the use of their children, grandchildren and themselves. At the same time Karl was arranging for an art exhibit in New York at the Babcock Gallery of the paintings of E. Ambrose Webster, an uncle by marriage. This winter they will continue their trip around the country by their airstream trailer, starting in Texas.

With regard to our 50-year Fund, **John Stevens** says, "This might be a good time

for those intending to contribute securities to do so now and get rid of (1) capital gains (2) in a high market and (3) before income taxes are again reduced! Haven't seen a Nineteener since our 45th."

Ted Saunders was called back into the Navy in World War II, from which he retired as a Captain in '58, and now lives in Asheville, N.C. He and his wife travel each winter and plan a trip to Greece in 1966. His son, USNA '46, has just been selected for promotion to Captain in the Navy. Ted and his wife also have three married daughters and their schedule calls for frequent visits to these four families to assist in raising seven grandchildren.

A most interesting report from **Bill Osgood**: "As sort of a last real fling, took a trip around the world last summer, primarily to see the Taj Mahal, which was worth all the trouble, time and temperature (105°) involved. Magnificent beyond description! As the result of a minor but disrupting shipwreck at Singapore, got a ride in Japan on the New Tokaido Line between Tokyo and Osaka, 320 miles in 4 hrs (now in about 3 hrs.). Marvelous train! Puts us to shame. Two intermediate stops. We could and should do the same sort of thing between Boston and Washington, with stops at New York and Philadelphia. Only a week in Japan. Most interesting and attractive people and country."

Arnold Staubach has retired from the Texas Highway Department as a supervising field engineer and is now living in Houston (new address below). . . . **F.C. Spooner** and his wife enjoy their island on Lake Winnepesaukee, N.H. They lease land on the island to the government for research projects. Several other Tech families on the island. . . . **Morton Smith**, in Great Barrington, has been retired since 1963. Had a surprise visit from **Arthur Johnson '19**, who was passing through, and is also retired. Smith and Johnson went to the Newport News Shipyard in October 1918 and were roommates there for three years, until they left.

Another traveller is **Ed Scofield** from Spokane, Wash., who made a trip East in 1965. "A day with Ed McCarthy '20 in Oelwein, Iowa, proved that an E.E. degree is no handicap to becoming a successful farmer and an outstanding politician—he is mayor! A visit in Wisconsin and Illinois, a week in Boston, reunion at Andover, visits with old friends thereabouts, including a review of the Wellesley campus, a week in New York to take in the Fair, an Oriole-Giants Game at which I caught a foul ball, and the real highlight of the trip—2nd row of Hello Dolly.

New addresses: **Arnold B. Staubach**, 2660 Marilee Lane, Houston, Texas, 77027; **Dr. Frank C. Hoyt**, Box 608, Los Alamos, N.M., 87544; **George B. Hirsch**, 156 Harper Terrace, Cedar Grove, N.J., 07009; **E. Russell Hubbard**, Box 853, Pinehurst, N.C. 28374.

I'm closing with a letter from **Paul Sheeline**: "I am sure that nobody gives a damn to know that I had some marvelous big game fishing off Panama this spring at Pinas Bay, or that my eldest grandson is quarterback on his prep school team. However, I have something that is impor-

tant which I would like to relay to all our classmates, a reminder that we have four years left to prepare for our 50th Anniversary Gift to the Institute. All that we gave last year and all that we give in the remaining four years will count, but most important of all, all bequests to the Institute will also be counted. Our goal is one half million dollars and it is hoped that we can go over the top before June 1969."—**Eugene R. Smoley**, Secretary, 30 School Lane, Scarsdale, N.Y.

'20

Eloquent testimony to the importance of the great event in our Class history—its Golden Anniversary—is the news that the Planning Committee for the 50th Reunion in 1970 has already held its first meeting. Present at the meeting were Reunion Chairman **Ed Ryer**, Class President **Norrie Abbott**, 50 Year Class Gift Committee Chairman **Bob Patterson**, Class Agent **Al Burke**, and Class Secretary **Hal Bugbee**. Since we are still four and one-half years away from the gala occasion, we shall say no more at this writing than that plans for both the Reunion and the Class Gift are well under way and that you will find them highly interesting and worthy of the event when you are informed, as you will be in the not too distant future.

Skeetz Brown has left New York and returned to his beloved Southwest. His new address is 4408 Oxford Ave., El Paso, Texas. Hope he gets to see George Morgan, Carl Carlson, D.D. Williamson and Forest Sanders—all still living in the Lone Star State so far as we know. . . . Classmates who live much nearer the Institute but of and from whom we have not heard for a long time include **Leland Gilliatt** of 7 Florence Rd., Marblehead; **Henry L. Nash** of 130 Common St., Watertown; **Creighton Stanwood** of Belmont; **J. B. Margolis** of Brookline; **Carlton Proctor** of Reading; **Ken Roman** of Boston; **Meyer Saxe** of Brookline; **Abe Shlager** of Brookline, **Bennett Groisser** of Brookline and Abe's long-time business partner, **Ralph Abercrombie** of Springfield, and **Bob Bradley**, who I hear has recently retired from some of his many successful enterprises. How about giving your old secretary a tumble, fellows?—**Harold Bugbee**, 21 Everell Rd., Winchester, Mass.

'21

Happy 45th Reunion New Year! Bright thought for today: In just six months, a large group of classmates, their wives and guests will spend nearly five memorable days together in celebration of the 45th anniversary of the Class of 1921. We sincerely hope you and your wife will be there to enjoy the fun and relaxation of being with true friends in historic New

England vacationland and on the breathtaking new campus of M.I.T. Dig out and answer that November letter from **Mel Jenney's** Reunion Committee, if you haven't done it by now, and start planning your trip to Groton and Cambridge immediately. We all want to see you.

Honors continue to be showered upon '21ers. This month, we have the singular opportunity to record a posthumous honor for a member of the Class who held an important teaching post at Technology, in the form of a national engineering society award, the first recipient of which is also a member of the Class. The American Society of Mechanical Engineers selected **Dr. Walter J. Hamburger**, chairman and chief executive officer of Fabric Research Laboratories, Inc., 1000 Providence Highway, Dedham, Mass., 02026, as the first person to be honored with the new **Edward Robinson Schwarz Memorial Lectureship Award**. The announcement stated that Walt was the outstanding choice "as the man best qualified to present a serious and intense review of progress and to develop a long range technical philosophy in textile engineering." The citation said the A.S.M.E. awards committee made this first award "in recognition of his competence as a textile engineer, his leadership in industrial research, his unselfish devotion and service to textile professional societies, his research contributions to knowledge of the mechanical behavior of fibrous materials, his abilities as a teacher and lecturer and his cultivation and dissemination of the technical philosophies of Edward Robinson Schwarz." Walt delivered the lecture September 29 at the A.S.M.E. textile engineering conference in Atlantic City, N.J., in connection with an exhibition sponsored by the American Textile Machinery Association. He reviewed the interaction of fiber assemblies with textile processing machinery and discussed the effects of mechanical processing stresses and strains as they may modify the properties of textile structures. His lecture also considered the response of textile materials at both macro- and micro-strain levels, as they influence the behavior of fiber assemblies and final structures.

In establishing the Edward Robinson Schwarz Award in 1964, the A.S.M.E. recognized an industry-wide mandate to honor his memory and the technical and research leadership he provided in his numerous contacts with leaders in all branches of the textile industry. Through his versatile personality, the late Professor Schwarz had introduced and interpreted to the industry the value of research. A native of Lawrence Mass., where he was born on March 4, 1899, he entered Technology with us in 1917 and received the bachelors degree in Course II. He became an instructor at the Institute in 1925 and, in 1937 became professor in charge of the Textile Division of the Mechanical Engineering Department, a post he held until his death on July 27, 1961. He developed courses and procedures for studying the fundamental behavior of fibers and fibrous structures and for training students at both the master's level and in a doctoral program in fibrous materials. Many current leaders in textile research and engi-

neering were his students. He held numerous memberships in learned and industry societies and was the recipient of several national awards. Outside of his primary field of interest, Ed Schwarz was an enthusiastic worker in his church. He was active in fire prevention and safety. He was an accomplished magician and an adept performer. He was a writer of poetry and published some of his works in 1952. A devoted husband and father, he is survived by a son, Edward H., M.I.T. '53; and two daughters, Mrs. Kenneth E. Cox and Mrs. Robert W. Perkins.

One of three M.I.T. men who founded Fabric Research Laboratories in 1942, Walt Hamburger had returned to Technology for his master's degree in textile technology in 1941, later obtaining his doctorate in polymer mechanics at the Polytechnic Institute of Brooklyn. He also taught at the Institute as well as at Simmons, Brooklyn Poly and Lowell Institute. Walt has done outstanding research in fiber, yarn and fabric mechanics. He has served on the Quartermaster Research and Development and the Materials Advisory Boards of the National Research Council, on the board of trustees of the Textile Research Institute, the board of directors of the American Society for Testing Materials, as past national president of the Fiber Society and a former vice-president of the Textile Institute, Manchester, England. Walt is a member of many technical and industry associations. He has received a number of previous honors, including the Olney Medal of the American Association of Textile Chemists and Colorists, the Harold DeWitt Smith Medal and the Edgar Marburg Lectureship Award of the American Society for Testing Materials. A registered professional engineer, he is the author of some 35 technical articles and an inventor with a half-dozen patents in his name. Sincere congratulations from all of us, Walt.

Edward P. Clark continues to enjoy retirement at his home at 20 Bristol Road, Damariscotta, Me. 04543. . . . **John G. Lee**, retired director of research of United Aircraft Corporation, maintains his home on Old Mountain Road, Farmington, Conn. 06032. John still serves United as a member of its research science advisory committee and he is chairman of the board of regents of the University of Hartford. . . . The Rev. **Samuel H. Miller**, dean of the Harvard Divinity School, makes his home at 44 Francis Avenue, Cambridge, Mass. . . . **Ralph R. Evans**, chemical engineer of the Simplex Wire and Cable Company of Cambridge, gives his home address as 47 Youle Street, Melrose, Mass. 02176. . . . **Joseph G. Kaufman** is a member of the ever-increasing Florida retirement group. He resides at 923 Essex Road, Daytona Beach, Fla. 32617. . . . **Howard B. Tuthill** is president of the Oliver Machinery Company, the Grand Rapids, Mich., firm which recently displayed its specialized wrapper-labeler equipment, luncheon meat labeler and imprinter at the November Packaging Machinery Show in Chicago. The company also held its seventeenth annual recognition dinner at which awards were

made to the 88 employees with more than twenty years of service. . . . An article in the Steubenville, Ohio, "Register" tells of the St. Matthew's Mission Center being built in Freeport, Ohio, almost entirely by the local parishioners. **James F. Curtin**, who has retired from his engineering duties with the Gillmore-Olson Company of Cleveland, is credited with having made all the sketches of the building, which will be available for community as well as liturgical purposes. John's mail should be addressed to Box 47, Freeport, Ohio.

Maxine and your Secretary have returned from a stay in Grand Rapids, Mich., for the wedding of our daughter, Ellie, to Joe Blanton. The young couple will make their home in Grand Rapids. We were most pleased that Mrs. Harrison Hume Mosher, Sr., widow of our classmate, was present at the ceremonies. . . . You have now received a letter from Class President **Ray St. Laurent**, bringing you up to date on 1921 affairs and formally announcing our 45th Reunion immediately preceding Alumni Day 1966 next June. Class Agents **Ed Farrand** and **Ed Dubé** sent you their appreciation for your Amity Fund response, together with the fund's annual report and a note on Technology's views of a complete educational experience. Next, **Mel Jenney** and his Reunion Committee sent you an outline of the plans for our reunion at the Griswold Hotel and Country Club on Eastern Point in Groton, Conn., from June 9 through June 12, and the subsequent trek to Tech for Alumni Day, June 13, on campus in Cambridge. **Ted Steffian's** sketches are so appealing, we don't see how you can possibly fail to attend! You were urgently requested to complete and return promptly the questionnaire included with the letter WHETHER OR NOT you will attend these outstanding events. If you and your wife do plan to join the happy throng—and we hope so—you must return the questionnaire in order to receive future mailings with the registration form. If you can't possibly attend, please also return the questionnaire to tell us now and help save needless further expenses for costly printing, handling and postage. Those of us who have seen and stayed at the reunion site can attest to the completeness and excellence of the Griswold's facilities and services for your every comfort and pleasure. The setting is ideal for vacationing, sight-seeing, golf or whatever you enjoy and you'll probably want to return after we go to M.I.T. for a most unusual Alumni Day, which promises to be a gala observance of the fiftieth anniversary of Technology's move from Boston to Cambridge. Please come back with '21!

Flashback: Forty-five years ago, as seen by "The Tech" during the month of January 1921, **Larry Conant's** term ended as president of Corporation XV. He became a director along with **Warrie Norton** and **George Pollock** and **Jack Kendall** was elected treasurer. Captain **Al Adick's** boxing team tied Springfield College in a meet featured by wins by **Al and Tom Proctor**; the late **Willie Corbett** and the late **Al Povah** were substitutes on the team. **Harry Field** and the late **Spence Butler** were ushers at the Dorm Dance.

Bill Freeman was elected president of the golf club. **Norm Patton** managed advertising for VooDoo. **Phil Coffin's** wrestling aggregation defeated the Cambridge Y.M.C.A., with **Watts Humphrey** in the 175-pound match. Also on the team were **Harry Rosenfield** in the 158-pound class and **Julius Gordon**, 135 pounds. Institute Committee President **Reg Smithwick** appointed **Irv Jakobson** to head a special activity in arranging a dinner and otherwise raising money for the support of the Hoover Fund for European Relief. President **Antonio H. Rodriguez** took his Cosmopolitan Club on a trip to the Waltham Watch Company. The late **Dan MacNeil**, captain of the hockey team, starred at center in a game against Kings College of Canada at the Boston Arena. In the next match, with Boston College, **Ed Delany** at left wing scored the winning goal in an overtime period for a final score of 4-3. **Howard MacMillin** had charge of the election of the board of editors for *Technique* 1923. The swimming team, variously managed by **Dick McKay** and team member **Fritz Ferdinand**, included among its stars Captain **Judge Greene** in the 220, **Bill Young** and the late **Babe Colton** in the relays, with **Bob Barker** and **Harry Junod** prominent in other events. Competitive Tech Show scenery designs were submitted by **Glenn Stanton**, **Ralph Flather** and **Ted ("Kiko") Quiros**. **Merritt Faren** was chosen to design the cover for the score of the show. **Watts Humphrey** presided over the Technology Athletic Club, assisted by **Lyall Stuart** on the executive committee. **Carl Thumim** won his match in the Intercollegiate Chess League meet with Pennsylvania. The entire M.I.T. community mourned the passing of world-renowned Professor **William T. Sedgwick**; **Frank Holmes** and **Russ Tewksbury** were among his students who served as pallbearers. The destinies of The Tech were being guided by managing board members **Ray St. Laurent**, **Cac Clarke**, **Bill Rose** and the late **Art Skilling**. **Bill Freeman** and **Ralph Price** served in editorial capacities. The "Lounger" cynically observed that the beaver had been chosen to represent the average student because he sleeps all winter!

Dug and **Betty Jackson** took a break on the Lido in their trip around the world to write a most welcome post card which says, in part: "Your long letter was awaiting us when we arrived in Nice. We are right on the ocean. Writing to Harry Field that we will see him in Honolulu, where one of Betty's Radcliffe classmates, a retired University of Hawaii professor, plans to meet us on arrival." . . . It is with a great deal of relief that we have the following letter from **Father Everett R. Harman**. Writing on the stationery of the Daniel Freeman Hospital, conducted by the Sisters of St. Joseph of Carondelet at 333 North Prairie Avenue, Inglewood, Calif., Ev says, in part: "Just a note to say that I have won a bout with cancer and am discharged today, after two months and two occasions of major surgery. So I am starting a new chapter—the last, I expect—with a new lease on life on this fifteenth day of October 1965, which is my seventieth birthday! I was back for our 40th anniversary

in 1961 and wish I could make it on our 45th. I will remain here for a while as chaplain, assisting the regular chaplain until I am fully recovered." We all join in best wishes for good health and the complete enjoyment of the new "chapter!" . . . This is an open invitation to all wives to take a tip from **Betty Hayward** and send us news of your husband's activities if they haven't appeared in these columns. Not that we have any complaint about **Sumner**, who has been a generous contributor to our '21 news—usually about other classmates. We are glad to acknowledge his industry and civic pride in being the captain of the first Community Chest team to achieve its quota in his home town of Ridgewood, N.J. A two-column photograph in the Ridgewood Sunday News shows Sumner receiving an award for attaining more than 108 per cent of his goal. He also headed the top team last year. A later communication confirms that **Betty and Sumner** will visit us in Brielle in the next few days and adds that he is still the chairman of the Amity Fund solicitation for the Class of '21 in the New Jersey-New York area. **Joe Morrell** and **Joe Wenick** are aiding his efforts to put the total current year's giving to the fund over the \$2 million mark. They tell us they hope everyone in the Class will join at least the \$100 Club in this 45th anniversary year.

John S. Cummings, project engineer for Jackson and Moreland in Boston, gives his home address as 52 Hastings Road, Belmont, Mass. 02178. . . . Although officially "semi-retired," Vice-president **Jackson W. Kendall** still spends much of his time at his office with **Bekins Van and Storage Company**, 1335 S. Figueroa Street, Los Angeles, Calif. 90015. He and **Marge** make their home at 401 Hermosa Place, South Pasadena, Calif. 91030. . . . **C. Doane Greene** lives at Decoy Farm, Rock Hall, Md. 21661. Judge is a project engineer at the Army Chemical Center, Edgewood Arsenal, Md. . . . **J. Rowland Hotchkiss** of 1 Slope Drive, Short Hills, N.J. 07078, is president of the organization he founded, the Palnut Company of Mountainside, N.J., and a director of the parent firm, United-Carr Fastener Company. . . . **Edward M. Eppridge**, assistant process manager for nylon production at DuPont's Wilmington plant, says his home address is now 518 Rothbury Road, Wilmington, Del. 19803. . . . We are puzzled by the move of **Ralph E. Ferdinand** from South Chatham, Mass., to a new home at 60 Preston Terrace, Marshfield, Mass. 02050. Is this retirement from Bethlehem Steel, Fritz, or an endeavor to be nearer the Boston operations? . . . **Benjamin Fisher** continues his long association with the Kendall Company as secretary and treasurer of the Boston firm. **Ben** lives at 309 Van Brunt Avenue, Dedham, Mass. 02026. . . . **Norman Insley** also can boast of a long association as a member of the technical staff of the Bell Telephone Laboratories in New York City, where he commutes daily from his home at 36 Old Middletown Road, Nanuet, N.Y. 10954. . . . **Raymond A. St. Laurent** of Rogers Corporation, Rogers, Conn. 06263, re-

ceives his mail at his home address, 47 Gerard Street, Manchester, Conn. 06041.

We interrupted **Ralph M. Shaw's** letter from Europe with his arrival in Madrid and an enjoyable "comida" with **Graciela Rodriguez** at the time **Helier** was on a trip to California. Rufe continues: "There are four in our party, my wife, Madeline, my sister-in-law, Ruth Read, and my niece, 'Missy' Read. I call them my 'harem.' We are taking 'Missy' through Europe to improve her mind. That means a Cook's Tour at every stop, which I dodge. Our means of transportation is a Mercedes diesel that I brought from home. With four people in the car and the baggage on top, we are loaded down. We disembarked at Naples, went to Capri, Pompeii, Sorrento, the Amalfi Drive. The autostrada (turnpike to you) took us to Rome in two hours; it used to take all day. In Rome, we had a reunion with our god-children from Nairobi around the swimming pool at the Hilton Hotel and bikini-clad maidens. My harem has them, too. On to Florence and Venice, where we had another swim in the Adriatic at the Lido. I recall, back in 1911, when it was immoral to be seen in a bathing suit on the beach. They had cabanas on wheels which a team of horses pulled out into the sea, where one went down a ladder to swim. In those days, a woman wore rather more than an eskimo. How times have changed! On to Vienna, which you can give back to the Indians. The soviets gave it to us and they never give away anything valuable. As for music there, I never even saw a juke box. On to Salzburg and rain. We had a good day going over Flexen Pass to Lichtenstein, another going over Overalp Pass to Lucerne and another going up the Jungfrau. We had two good days in Paris. The rest was rain—torrential rain. We beat a big storm to the Pyrenees. There was fresh snow on the ground and that night they closed the pass due to a blizzard. All of this in August. Here in Madrid, it is fair and hot. We came through Andorra, which used to be a collection of mud huts but which is now a metropolis, thanks to the absence of taxes. Untaxed merchandise is sold at twenty-five per cent below the market and people come from miles away to buy. Spain is on the boom. Franco is responsible for that. France is, too, for which DeGaulle gets the credit. Now the exchange rate is 4.8 francs to the dollar in comparison with 5.2 five years ago. The roads are crowded with new cars. High rise apartments are going up on all sides. Everybody has a job. It is very impressive. But now we are home-bound. It has been a great trip but I will be glad to get home. There is no place like the U.S.A. More anon."

Samuel E. Lunden, an Honorary Secretary of M.I.T., served as the official representative of Technology in the academic procession accompanying the inauguration of Richard Carleton Gilman as president of Occidental College in Los Angeles. . . . An innovation in his frequent travels, **Saul M. Silverstein** has taken 10 weeks to circle the globe in a westerly direction, probably to neutralize the dizzying effect of his previous eighteen trips going eastward. Starting early

in October from a takeoff at the Mark Hopkins in San Francisco, his trip is devoted chiefly to business of his Rogers Corporation, except for one-day business management seminars in Tokyo, Seoul, Hong Kong and Manila. Rigi left home a month later to join him in Manila for the balance of the trip, scheduled for mid-December completion. At this writing, four of Saul's incomparable day-by-day reports have been received by your scribe, the latest datelined Tokyo, plus a post card from Manila reading: "Still going around and around the World—but westward. Meeting Rigi here tomorrow. Regards." The saga from Honolulu is truly a "lulu." Saul says **Harry** and **Catharine Field** were unable to join him on arrival but he had lunch with them next day before a scheduled takeoff for Tokyo, which had to be postponed when Saul discovered he had Rigi's passport and his was in her possession back in Connecticut! We won't quote the lurid lines in the next few pages of the report or subject you to the description of the horrendous suspense of waiting out the various mail deliveries for the proper document to arrive in Hawaii. Suffice that some sixty hours after his first try, Saul was off to Japan, lovingly fondling his own passport! . . . On behalf of all of us in the Class who had the privilege of knowing and working with the late **Ralph T. Jope**, '28, business manager of the Review for 37 years, president of his class and active in a host of important alumni posts, we wish to convey our sorrow to his family, to the Class of 1928, to the M.I.T. administration and to Ralph's legion of friends everywhere.

It is with heavy heart that we record the passing of **Colonel Albert Lovell Edson** on his 73rd birthday, October 21, 1965, and extend to his family sincerest sympathy on behalf of the entire Class of '21. Born at Malden, Mass., on October 21, 1892, he prepared for Technology at Braintree High School and Lowell Institute. At the Institute, he was a member of the Aero Society and Corporation XV. During World War I, he attended the School of Military Aeronautics at M.I.T. and saw service at Gerstner Field, La., and Ellington Field, Texas, as a second lieutenant, Air Service Military Aeronautics, qualified as a bombardment pilot. He returned to his studies and was graduated with us in Course XV. He was variously with Eastern Theatre Equipment Company, an electrical instructor in the Veterans Bureau and executive secretary of the State Examiners of Electricians in Massachusetts before being named superintendent of the Boston Municipal Airport in 1929. He had complete charge of the planning, development, operation and maintenance of the port and subsequently made detailed reports and recommendations over an 11-year period for what is substantially the present General Edward L. Logan International Airport. From 1940 to 1946, he was on active military duty, attending the Command and General Staff School and advancing from major to colonel. His extensive war service included commanding the 101st Observation Squadron, serving as executive officer of the 1st Patrol Force

on anti-submarine patrol, air inspector of the anti-submarine command and of the African-Middle East Wing of the Air Transport Command. For 18 months, he was the senior American military commander in the Sudan and simultaneously commander of Yeomans Field, Khartoum, and the operations at Asmara, Ethiopia. For the next year, he commanded Harmon Field, Steventown, Nfld., the American section of Gander and the Newfoundland Base Command, winning the Army Commendation Ribbon. He had a total of 35 years of active and inactive duty. Following the war, he became the manager of Bedford Airport at Hanscom Field and, from 1948 to his retirement in 1957, the manager of Boston's Logan International Airport. Since that time, he has served as a member of the State Airport Management Board of Massachusetts. His memberships included the Engineers Club of Boston, the National Aeronautic Association, Reserve Officers Association, Aero Club of New England, American Association of Airport Executives, the Air Force Association and the Airport Crash Fire Protection Committee of the National Fire Protection Association. He is survived by his wife, the former Alice MacGregor; a son, John, of South Norwalk, Conn., a graduate of the Massachusetts Maritime Academy; a daughter, Mrs. Richard Speagle of Princeton, N.J.; three sisters, Miss Miriam Edson of Maumee, Ohio, Mrs. Myron French of Cleveland, Ohio, and Miss Theodora Edson of Weymouth, Mass.; a brother, William, of Braintree, Mass.; and six grandchildren. As reported in these columns last April and June, Al had been uniquely honored in the naming of the new million-dollar facility established at Logan Field for the exclusive use of private flyers. Called Edson Terminal, it recognizes Al's foresight in vastly increasing the use of the Boston port for so-called general aviation passengers and pilots who make use of their own flying equipment. Al graciously answered our letter of congratulations, expressing his good wishes to his many friends in the Class. We are indebted to **Chick Kurth** for aid in preparing these notes.

Start this New Year right—for your Reunion Committee, your Secretaries and yourself—by mailing in that questionnaire at once, if you haven't already done so. We hope you said you plan to attend the 45th Reunion—with your wife, of course—but even if you cannot possibly be there, please help by returning the completed questionnaire anyhow. Extra copies are available—write for one. Remember the big dates: Thursday, June 9 through Sunday, June 12, 1966, for the reunion events at the Griswold Hotel in Groton, Conn.; followed by all day and evening on Monday, June 13 for Alumni Day on the M.I.T. campus in Cambridge. We all hope to welcome you there.—**Carole A. Clarke**, Secretary, 608 Union Lane, Brielle, N.J. 08730; **Edwin T. Steffian**, Assistant Secretary, c/o Edwin T. Steffian and Associates, Inc., 19 Temple Place, Boston, Mass. 02111; **Melvin R. Jenney**, c/o Kenway, Jenney & Hildreth, 24 School St., Boston, Mass. 02108.

Greetings from sunny old Buffalo where your secretary has just had his "thrill of the year." He is pleased to report, as president of the United Fund, a campaign total of over \$7 million or 103.3% of goal. This tremendous tribute to the generosity and understanding of our local citizens is most satisfying. . . . Congratulations are extended to Dr. **John Wulff** our "1922 Professor" who received the 1965 Albert Easton White Distinguished Teacher Award of the American Society of Metalists in Detroit. The award is for his ability to inspire students and impart enthusiasm, and for his metallurgical accomplishments. President **Parke D. Appel** has cleverly tied this to the hope of establishing our second professorship at our 45th Reunion at the Wianco Club on Cape Cod, June 8-12, 1967. Give now, play later! . . . **Horace McCurdy** of Seattle has written of his wonderful summer which included a great deal of time on Blue Peter. Mac and Katie are spending the winter in their home at Palm Desert, Calif. . . . **Roger Hayward** of Pasadena continues to write and provide drawings for various articles. His latest regarding "Binocular Vision: The Effects of Vertical Accommodation and the Moiré Effect" explains these effects to a confused reader in logical sequence. . . . Dr. **Conrad Ronneberg**, Professor of Chemistry at Denison University since 1946, is author of a project manual entitled "A Laboratory Approach to the Physical Sciences," published this month by the Houghton-Mifflin Company of Boston. His pre-tested laboratory manuals for the beginning science course offers the student an "Integrated Project—Problem approach" which will enable him to participate at the currently higher levels of the new science programs. Dr. Ronneberg is past Program Director of Special Projects in Science Education for the International Science Foundation. . . . Dr. **Samuel H. Manion** of Arlington, Va., has retired from U. S. government service and is now System Director, Office of Critical Tables, National Academy of Sciences—National Research Council. . . . **Harry L. Pearson**, of Minneapolis, has retired from Montana-Dakota Utility Co. . . . **Manuel Shampianer** of Parsippany, N.J., is a chemical engineer at the Army Munitions Command at Picatinny Arsenal at Dover. . . . **Crawford Greenewalt** continues collecting, and this time it is an honorary Doctor of Laws Degree from Bowdoin College.

The sympathy of our class is extended to the widow and three children of **Robert M. Arnold** of Marengo, Ill. He was board chairman of Arnold Engineering Co., manufacturer of magnetic meters, a division of Allegheny-Ludlum Corporation of Pittsburgh. He was also interested in Industrial Research Products, Inc., Franklin Park, and Nuclear Metals, Inc., Cambridge, Mass. He was president and director of the Cliff Co., of Chicago, and a member of many technical societies and clubs. . . . We also extend our sympathy to the families of **Stanley D. Whitford**,

River Forest, Ill., and **Raymond V. Wood** of Cumberland, R.I.

In bringing up to date some addresses we have the following: **Ted Miller**, 502 Hale Street, Prides Crossing, Mass.; **Fred Dillon**, 3 Broad Street, Leominster, Mass.; **Carl Burdick**, Greenwich, Conn.; **Charles Burnham**, Exeter, N. H.; **Thomas E. Courtney**, Indianapolis, Ind.; **Henry S. Dimmick**, Cataumet, Mass.; **J. R. Hemeon**, Trenton, N. J.; **Frank Haughton**, Elmwood, Mass.; **John H. Teeter**, St. Petersburg, Fla.; **Edwin A. Terkelsen**, Newton Hlds., Mass.; **Lawrence Trowbridge**, Stamford, Conn.; Dr. **Mildred Allen**, South Hadley, Mass.; **J. Cecil Aronson**, Winter Park, Fla. . . . A last-minute visitor has just told me of the retirement of **Allen S. King** as president of Northern States Power Company, with headquarters in Minneapolis. . . . Be sure to send to your faithful secretary all attested winter golf scores for the Reunion Tournament and other personal news, which is eagerly welcomed. Happy Holidays!—**Whitworth Ferguson**, Secretary, 333 Ellicott St., Buffalo, N.Y. 14203; **Oscar Horovitz**, Assistant Secretary, 33 Island St., Boston 19, Mass.

'23

As this is written six weeks ahead of publication on November 11, at the hospital, your Secretary is recovering from major surgery at the New England Baptist Hospital, Boston, Mass. He reports that one of the Lahey Clinic doctors attending him, Dr. Norman Kattwinkel, is the son of a former classmate and associate in planning for the 1923 Class Reunion in 1940, Dr. **Egon Kattwinkel** who, before his death, was prominent in Newton-Wellesley Hospital development. The patient is doing fine and does not anticipate any Class News interruptions. News for this issue is lean so he contributes news on his own December 30, 1965, retirement from government service. Anything that you can do to contribute news about your classmates or yourselves will be greatly appreciated. We do not get any younger. Your classmates will be interested in your contributions and, it must be remembered, a news column cannot be produced in a vacuum. . . . **Dave Skinner**, our class president, has the subject of our 45th Class Reunion well in hand, for the Oyster Harbors Club, at the kind invitation of the outstanding Class of 1913 to share this beautiful spot with them. . . . **Robert L. Hersey** is noted in Industrial and Engineering Chemistry for August, 1965, as Director, Vice-president, and member of the Executive Committee, and vice-presidential advisor on Research and Development for DuPont.

Forrest Fay Lange, 1196 Woodbury Avenue, Portsmouth, N.H., was honored by his associates at a retirement dinner in the Rockingham Hotel, Portsmouth, N.H., on October 22, 1965. The affair was held by the Portsmouth Naval Shipyard Chapter of the Naval Civilian Administrators Association, a national management organization, of which he is

a Chapter Past President. Mr. Lange has served as head of Mobilization Planning and Continuity of Operations Planning, at the Portsmouth Naval Shipyard, Portsmouth, N.H., since 1947. Half of his industrial career was served in private industry. For 26 years he has served the U.S. Government in various engineering capacities, in three branches of the Armed Services and in seven civilian agencies. From 1912 to 1917 he served as a mechanical draftsman at the Worcester Pressed Steel Company and the Norton Grinding Company, Worcester, Mass. In 1917 he was sent to Washington, D.C., for special service by the manufacturers of Worcester, where he served in the Office of the Chief of Ordnance. In December, 1919, he enlisted in the U.S. Army at Fort Meyer, Va. He was selected as one of 20 enlisted men from the Office of the Chief of Ordnance for special service overseas. On arrival in France he was sent to Air Corps Headquarters, U.S. Army, A.E.F., France, where he served in the Aerial Armament Section, and later in the Drafting Division, Technical Section. While there until 1919 he served as Sergeant, Air Corps, U.S. Army (now the U.S. Air Force) and finally as chief draftsman. After the Armistice he was sent to Washington, D.C., as a courier. In 1922 he was commissioned in the Officers Reserve Corps. In 1919 he entered M.I.T. where he received his B.S. in Mechanical Engineering in 1923. In 1922 he married Esther Hazel Glidden in Jefferson, Maine. While at M.I.T. he was president of the Aeronautical Engineering Society, vice-chairman of the Student Section of the A.S.M.E. and a member of the Institute Committee. After graduation he served in a number of engineering capacities in subsidiaries of the Union Carbide and Carbon Corporation; assistant to the superintendent of the Machine Shops, Linde Air Products Company, Buffalo, N.Y., (1923-24); Assistant Engineer of Design, in charge of the New York Drawing Office, L.A.P. Company (1924-30); this office was responsible for the design of complete oxygen, acetylene and chemical plants which were constructed throughout the United States, for Union Carbide's gas group of companies (then known as the L.A.P. Company; Prest-O-Lite Company, and Carbide and Carbon Chemicals Corporation). While in New York he was on the M.I.T. teaching staff and, for five years, conducted a course in "The Technique of Cooperative Thinking," given to M.I.T. Course VI-A students taking part of their training at the Bell Telephone Laboratories. From 1930-31 he served as Factory Engineer of the Machine Shops of the L.A.P. Company, Buffalo, N.Y.; this plant manufactured the high pressure air and oxygen compressors, pressure vessels, valves, etc., used by Union Carbide's subsidiary oxygen, acetylene and chemical plants. From 1931-34 he served as Chief Draftsman of the Prest-O-Lite Company, Speedway, Ind., in charge of Tool Design and Product Design; this plant manufactured high pressure vessels, valves and other equipment used in the acetylene and propane gas industry. From 1934-41 he served as a Consulting Engineer,

his office being in the Slater Building, Worcester, Mass. In addition to recommendations and reports made relative to wire rope plant modernization, and specialized optical equipment design and manufacture, engineering consulting service was given to architects, contractors and general equipment manufacturers throughout the New England States. From 1941-43 Mr. Lange served the U.S. Government as Mechanical Engineer (Industrial Production) at the Hartford Ordnance District (later renamed the Springfield Ordnance District). Here he served in a number of engineering capacities and was made head of the Production Division; while in this capacity he compiled a Machine Tool Inspection Manual, which was later used by the Springfield Ordnance District Inspection Division as a guide in the inspection of all types of machine tools being constructed for the U.S. government on Army contracts, including "lend lease" contracts. He prepared industrial mobilization plans for many private producers of war materials for the Army in the District, showing what was necessary at these plants to double, triple, and even quadruple their output. He received a commendation from the Office of the Chief of Ordnance for his industrial war planning in this area. Many of these plans for private plants were implemented after Pearl Harbor. He also received a commendation from the Ordnance Department for a suggested change in the method of manufacture of a part of a bomb tailfuse, used in all 50, 100, 500, 1000 and 2000 pound aircraft bombs. After November 22, 1943, the suggested change was made mandatory by the Ordnance Department. Thereafter all plants in the United States making this part were required to retool in accordance with the new method. While with the War Production Board at Boston, 1943-45, he assisted in developing and establishing the Production Urgency System used throughout New England to determine the relative priority of all items being produced for the war effort. The information thus derived was published to assist all manufacturers producing war material, and all U.S. Employment agencies, in giving the most needed items top priority; for example, material for the "Manhattan District Project" (i.e. used to make the atomic bombs dropped on Japan). From 1945-46 Mr. Lange served as a Regional Loan Engineer for the Smaller War Plants Corporation and Reconstruction Finance Corporation in New England. His appraisals and engineering reports were used as a basis for making loans to all types of Industrial Operations throughout New England. Such loans assisted war plants to convert from war production to peacetime operations without economic loss. While with the National Housing Agency he assisted the construction industry throughout New England by helping to resolve the problems of individual contractors, whose operations had been either completely stopped or were threatened with stoppage due to uses beyond their control. From 1946 to 1947 Mr. Lange served the Federal Housing Administration as ad-

ministrative officer (housing project representative), and also as construction inspector for all F.H.A. rental housing projects being constructed in the metropolitan Boston area (three at that time). In 1947 he was engaged as senior consultant and analyst of the Management Planning and Review Department of the Portsmouth Naval Shipyard, Portsmouth, N.H., and in 1948 was made head of the Mobilization Planning Division of the Department and Acting Mobilization Planning Assistant to the Shipyard Commander. Since disestablishment of the M.P. & R. Department and establishment of the Management Engineering Office in 1961, he has continued as head of the Mobilization Planning Division. In that capacity he has been directly responsible for the mobilization, planning and continuity of operations planning for not only the Naval Shipyard but also a number of other large (planned) Naval Activities in the Northern New England area. He is listed in Who's Who in Engineering. Mr. Lange is a past president of the Portsmouth chapters of two national management associations: the Naval Civilian Administrators Association and the National Association of Naval Technical Supervisors, of which he is also a past National Vice-president (1952-53). He is a past Regional Chairman of the M.I.T. Alumni Fund and past Regional Chairman of the M.I.T. Second Century Fund, in the Portsmouth, N.H., Seacoast Region. He is a Registered Professional Engineer in the states of New Hampshire, Massachusetts and New York, and a Life Member of the American Society of Mechanical Engineers, a member of the National Society of Professional Engineers.

The Morning Globe of September 10, 1965, contains an interesting article by Donald White about the Sprague Electric Company, North Adams, Mass., of which **Robert C. Sprague** is founder and Chairman of the Board. Sprague employs more than 10,000 at a score of plants in the U.S. and overseas. He says that this year his business will join the \$100 million sales elite.

Colonel **Fredrick Lindtner** (Air Force, retired) of Benjamin Nye Road, a former commander of the 33rd Air Base Group at Otis Air Force Base and later a special assistant to the base Commander prior to his retirement, died on October 16, 1965. He had suffered a heart attack a few weeks ago and had undergone treatment at the base hospital before returning to his home. A native of Norway, Colonel Lindtner was educated in Norway and in England. He came to this country in 1919, studied at M.I.T., and became a U.S. citizen. In 1941 he entered the Air Force in England and France and the Allied Air Forces in Norway during World War II. He participated in hit-and-run commando-type raids in his native Norway during the German occupation of that country. While at Otis, Colonel Lindtner was prominent in liaison activities between the base and surrounding communities. He was a frequent speaker at military-civilian meetings and affairs. During the Korean conflict Colonel Lindtner served in Japan and other Far East nations as director of personnel for an air

division. He received his assignment to Otis Air Force Base in 1954 and was retired about four years ago. In January, 1962, Colonel Lindtner was married to the former Anne Elizabeth Buckbee of North Falmouth. In addition to his wife, Colonel Lindtner leaves a son by a previous marriage, Jeffrey Lindtner, and Colonel Lindtner's mother, who lives in Norway.

Word has been received of the deaths of the following classmates, but no details are available: **Robert P. Bolster**, 45 Lafayette Road, Newton Lower Falls, Mass., on August 4, 1965; **Ralph W. Hemenway**, 55 Richgrain Avenue, Waltham, Mass. 02154 on August 23, 1965. . . . The Alumni Office has advised of the following changes of address: **Ronald D. Brown**, 27 Edgewood Road, Lexington, Mass. 02173; **Robert T. Colburn**, 101 Hundreds Road, Wellesley Hills, Mass. 02181; **E. Louis Greenblatt**, 590 Beach Street, Revere, Mass. 02151; **Herbert L. Hayden**, Main Street, Lancaster, Mass. 01523; **William S. La Londe, Jr.**, 77 Jefferson Ave., Short Hills, N.J.; **William L. Merrill**, 251 West 92nd St., New York, N.Y. 10025; **Dale Purves**, 1011 E. Washington Lane, Philadelphia, Pa. 19138; **Philip C. Smith**, Box 13, Melvin Village, N.H. 03850; **Charles T. Burke**, 76 Spruce Street, Watertown, Mass. 02172; **Arnold Dutton**, The Gateway, 623 Main St., Youngstown, N.Y. 14174; **Gerald M. Frank**, 5539 Bellerock Place, Pittsburgh, Pa. 15217; **Arthur L. Hill**, 555 Circle Drive, Denver, Colo. 80206; **Charles S. Keevil**, 130 Meadowbrook Rd., Needham, Mass. 02192; **Myles Morgan**, 11 Westwood Drive, Worcester, Mass. 01609; **Joseph Nissen**, 91 Hoitt Road, Belmont Mass. 02178; **Earl C. Palmer**, 70 Manhattan Ave., Avenel, N.J. 07001; **Philip R. Pearson**, 88 Lewis Ave., Walpole, Mass. 02081; **Paul R. Plant**, Grasshopper Lane, Lincoln, Mass. 01750; **Stewart E. Reimel**, 3504 Cornell Road, Fairfax, Va. 22030; **Edwin C. Schatz**, 28 Central Ave., Ravena, N.Y. 12143; **Herman Swett**, 2233 N.E. 46th St., Seattle, Wash. 98105.—**Forrest F. Lange**, Secretary, 1196 Woodbury Ave., Portsmouth, N.H. 03801; **Bert-rand A. McKittrick**, Assistant Secretary, 78 Fletcher Street, Lowell, Mass. 01852.

'24

It is to be hoped that the old wheeze about no news being good news still applies, because that's just about what it's going to be this month. We're saved from a complete blackout by a couple of letters plus a lunch with **Felix Stapleton**. Felix, retired long since from a round of jobs with various government agencies in Washington, has lost one eye and sees very poorly with the other. This has not affected his interest in everything around him in the least, and we spent a happy time playing the "Remember" game, among other things. . . . One of the letters gives further details on the Ambach's South American junket, mentioned last month. Russ says: "Ethel and I left Boston August 13 and stopped 24 hours

in Panama. We touched down at Lima and landed in Santiago Sunday noon in the heavy rain at the end of the Hurricane and snows of the previous two weeks. We visited Dwight and his family until September 4. You may recall that Uncle Sam sent him to M.I.T. in 63-64 for special courses in economics. He is in the American Embassy there. We flew to Buenos Aires for three days and then on to Rio de Janeiro for a few days before leaving at midnight and arriving in New York at 8:30 next morning. We must say that Pan Am and Panagra were tremendous. One of these days we will bore you with many slides, a few of which are excellent." . . . The other letter, from **Paul Cardinal**, reports that there were 10 at the last '24 lunch at the Chemists' Club in New York, and that's twice as many as the month before. They were Walter Bagby, Griff Crafts, Ray Forsyth, Ed Lindstrom, Henry Liebman, Jack Lewis, Nate Schooler, Howard Stevens, Jack Tench, and of course Paul himself. Undoubtedly a very gala affair. If you're in town on the second Wednesday following the first Monday of the month, do join them. . . . When we registered as freshmen in October, 1920, there were 700 of us. When the second term started on January 7, some 165 were missing. That's a whopping 24 per cent. By comparison, last year's freshman class had only a 5 per cent loss for the entire year! Guess they weren't quite as selective in our day. And by the way, among the missing was our first president, **Mel Taylor**. But then, the Institute was without a president, too, at that time. An added footnote: Dean Talbot was quoted as saying that "our present method of eliminating students is unsatisfactory, since many men who received Vote Ten later prove to be better in the world of commerce than those who successfully pass the examinations." Some of our classmates proved that to be true. . . . So much for history. A new year is ahead of us. May it bring you health and happiness and a sense of satisfaction in whatever you undertake—or, for some of us in retirement, whatever we are pleased not to undertake.—**Henry B. Kane**, Secretary, Room E19-439, M.I.T., Cambridge, Mass. 02139.

'25

Time did not permit providing complete information regarding **Mac Levine** in the last issue of class notes. During his entire business life, Mac was associated with spring manufacturing, and in 1940 he founded the Webster Spring Company, with his factory since 1962 located in Oxford, Mass. He found time to participate in many activities, not the least of which were those connected with M.I.T. He was our Class Vice-president from 1960 to 1965; he was the Worcester Regional Solicitation Chairman for the Second Century Development Program and, in 1957, for the Alumni Fund Drive; and, as mentioned previously, he was Chairman of the 40th Reunion Gift Committee for our class. He was a Trustee of Temple

Emanuel in Worcester and chairman of the building committee which provided the Temple with a beautiful edifice for worship. He was also a member of the board of the Worcester Jewish Federation; he was a member of the Boston Stein Club of M.I.T. and the M.I.T. Faculty Club, and was the first President of the Bedding and Spring Institute. His great interest in many activities is indicated by his affiliations, which included the Society for Advancement of Management, the American Ordinance Association, Bnai Brith, Worcester Foundation for Experimental Biology, Worcester Art Museum, Worcester Community Center, and the Worcester Jewish Home for the Aged. He leaves his wife, Anne, a son, Alexander, and a daughter, Joan. . . . Word of two other deaths has reached us during the past month. **Dennis R. Sciscento**, who was associated with the Consolidated Edison Company in New York, passed away on May 10, 1965; and **Jose G. Amaro** of Montevideo, Uruguay, passed away on February 2, 1962, although word of his death did not reach us until late in June.

Retirements are also in the news. **Alva B. Morgan**, secretary and assistant managing director of the Edison Electric Institute, retired on August 1, 1965, having served with the Institute and its predecessor association for 38 years. . . . **Charles M. Cooper**, associate director of DuPont's Engineering Development Laboratory and a pioneer in atomic energy development, retired on June 30 of this year. He is now living in Northfield, Mass. During World War II, Charlie was the first DuPont man loaned to the University of Chicago, where he was in charge of engineering phases of plutonium development at the Metallurgical Laboratory of that university, operated in connection with the Manhattan District Program. Following the War, he returned to Du Pont as Director of what is now the Engineering Technology and Materials Laboratories. In 1958, he became Assistant Director of the Engineering Research Division, and then on to the position from which he retired. For a number of years, Charlie was a resident of the Newark, Del., area, where he was quite active in connection with the educational problems of that city. He was the 1965 commencement speaker at the graduation exercises at Newark High School last June.

Two of our classmates have received awards during recent weeks. Dr. **Morrough "Mike" P. O'Brien**, Dean Emeritus of the College of Engineering, University of California at Berkeley, was named to receive the General Tasker H. Bliss Medal of the Society of American Military Engineers for 1964 for his exemplary contributions in the field of military and engineering education. . . . **Maxey Jarman**, industrialist and philanthropist of Nashville, Tenn. received the "American Churchman of the Year" award at ceremonies held in Louisville, Ky., in October. The award is presented annually by the Lay Associates of the Southern Baptist Theological Seminary. Previous recipients have been Van Cliburn and Astronaut John Glenn, so Maxey finds himself in quite distinguished company! The Lay

Associates of the Southern Baptist Theological Seminary are a group of friends of the Institution who help underwrite many activities relating to continuing theological education and research.—**F. L. Foster**, Secretary, Room E19-702, M.I.T., Cambridge, Mass. 02139

'26

This issue of notes is being written in the logical way. For the past half hour I've been spreading clippings, pencilled notes, releases, letters, etc., all over the living room floor, so theoretically all I have to do is sort and edit. (We did not get out to Pigeon Cove this weekend.) I must make sure that Heidi doesn't come bounding in while I'm at it because a St. Bernard paw in the middle of it would fix things fine. Heidi is now 10 years old, but last evening when Ruth was walking with her she spotted a cat and left dignity and age in the dust. She did, however, oversleep this morning. As I look at these clippings before me I'm beginning to wonder what I'm going to write about when you fellows are retired and are not making headlines all the time. And believe it or not I have an idea—you are going to do the writing. You may recall last month I reported that of those who replied to an Institute mailing enclosure, "News for your Class Secretary," four out of five were retired! One more came through this month from **Richard Peterson**, "Retired after 35 years with Cities Service Oil Company some two years ago and now engaged in the real estate business in Somerset County of New Jersey. Hobbies are golf and bowling." If that isn't a tip-off; it appears certain that when you retire I should be able to get you to write more easily. Thanks to Dick Peterson for the final tip-off! . . . **Charlie McCulloch** has made the headlines again. Quoting from the New York Times, "Charles E. McCulloch has been elected President of Foster Wheeler International Corporation, it was announced by John E. Kenney, chairman of the parent company, Foster Wheeler Corporation. In his new position, Mr. McCulloch will be responsible for coordinating worldwide activities. Presently Foster Wheeler International has wholly owned subsidiaries in England, Canada, France, Italy, Spain and Brazil, and is a partner in Ishikawajima Foster Wheeler Company, Ltd., Japan. All subsidiaries are engaged in the design and construction of process plants for petroleum refiners, petrochemical and chemical producers. Mr. McCulloch has had broad experience in the foreign field in his years with Foster Wheeler, having been vice-president in charge of the International Division and subsequently head of the French company, and managing director of the British Company. Mr. McCulloch joined Foster Wheeler in 1927 as a process engineer." Congratulations Charlie, but we expected great things from you from the beginning so we cannot express surprise, only pleasure. Someone sent me the World Business page from Time magazine sometime ago. I think it

was Ben Margolin or Gordon Spear. At any rate there is a picture of our classmate S.L. "Sandy" Kirloskar, head of India's Kirloskar group, a seven-company combine that sells \$46 million of farm and industrial equipment yearly in 42 nations. This was built up from a small, family-owned motor company after "Sandy" graduated from M.I.T. The article is too long to cover in detail but the achievements cited—65% of India's diesel engines, 40% of its centrifugal pump, 36% of its electric motors—are typical and make us proud to be able to point to "Sandy" Kirloskar as a member of our class. . . . At the recent inauguration of Dr. Keast at Wayne State University, M.I.T. was represented by none other than our classmate **Dave Sutter**. . . . "Pink" Salmon had a letter a few months ago from **Eben Haskell** and we learn that Eben has had two major illnesses in the past two years. Since we are a little late reporting this we hope we have allowed time for Eben's complete recovery. . . . Clippings keep coming in from all over telling of speeches by **Dick Pough**. A tip-off in one clipping is the statement, "Pough, an author and naturalist, devotes most of his time to helping civic organizations preserve some of their communities' natural area." Dick's life work has been different from that of the rest of us and the great need for such leadership has come into focus only in recent years. We hope to continue hearing about Dick's expanding activity in conservation. . . . **Don Green** in a recent note to Pink Salmon mentioned that of his three daughters the oldest is married and has provided two granddaughters; one of the other daughters was to be married about the time these notes are being written. Don, you sure are surrounding yourself with girls! Don is a vice-president of Enjay Chemical Company.

We have congratulations for **Arthur Underwood** by way of a clipping from the East Lansing, Mich., "Clarion," "Arthur Francis Underwood, 155 Tree Top Lane, Rochester, has been elected a Fellow of the American Society of Mechanical Engineers." . . . Our final news item is an 8" x 10" glossy photograph of a tall, fine looking, well groomed executive standing between two military men at West Point; it is our class president! Since I cannot put the picture in our column I'll at least give you the caption. "Mr. **David A. Shepard**, executive vice-president, Standard Oil Company of New Jersey, talks with his escorts during an orientation visit to the U. S. Military Academy last week. Mr. Shepard was one of eleven leaders of commerce and industry visiting West Point for briefings on how the Military Academy serves the national defense. With Mr. Shepard are, Lt. Col. Robert A. Smith, of Washington, D. C., Assistant Deputy Chief of Staff for Logistics, and Cadet Frank G. Pratt, Jr., of Utica, N.Y."

I cannot close without some mention of a subject that is uppermost in the minds of most of us—our class gift. I don't intend to usurp any of **Austin Kelly's** function and my job is to write class notes. However, this coming June is of such great importance to one of the outstanding classes of all time that let's make certain it is per-

petuated the way you and I want. It's only five months away! Cheerio until February.—**George W. Smith**, E. I. DuPont de Nemours & Company, Inc., 140 Federal St., Boston, Mass.

'27

Carlton Davies has come up with an idea which none of us had thought of in connection with the class gift. He wrote: "Do you remember the policies we took out with the Mass Mutual just before graduation with the first \$250 of dividends payable to the school on our 25th? I don't know how many of you have carried these through to the paid-up state, but I for one have mine in this condition. I would like to give it to the school to be cashed in (about \$600 cash value) or left until Gabriel calls me—in which case it would be worth about \$1000 plus any dividends accruing at about \$25 per year. Perhaps you all might like to suggest this to some of the others and gather in a few thousand this way." Originally 286 of us took out these policies. Is yours still in force? Carl is still a partner of Coney-Davis Lumber Company, P.O. Box 901, Charleston, S.C.

Tom Knowles went with Goodyear on graduation and for all but one year since he was with the Goodyear aviation operations. On November 1, he retired as President of Goodyear Aerospace Corporation. After staff training in 1928, he was transferred to the Goodyear Zeppelin Corporation. He was a research engineer on the rigid airships Akron and Macon, and flew to Germany on the Graf Zeppelin in 1933. For Goodyear Aviation Corporation, he was successively Washington representative, sales manager, vice-president, and, in 1956, president. In keeping with his field of endeavor, he was a qualified pilot for both heavier-than-air and lighter-than-air craft. In 1963 he received an honorary doctor of engineering degree from the University of Akron. Currently he is a governor of the Aerospace Industries Association. Having been associated with the aviation industry myself for a long period, I know that Tom will be missed in aviation circles.

Here is a fine letter from **Andy Anderson**: "We moved to Pompano Beach in 1959 and took over a small motel on Route A1A close to the beach. This was quite an experience and a departure from what I have been doing since graduation. It is an activity, incidentally, where a background of do-it-yourself experience is very handy, if not essential. I came back with Monroe Calculating Machine in 1960 and have been manufacturing vice-president during the past five years. We did not move our residence here to Bristol, Virginia, however, until about a year ago. . . . My son is a senior at Yale and my daughter graduated from the University of North Carolina and is now a graduate student in England. . . . It may be of interest that, as far as I know, there were three M.I.T. graduates in this city of 45,000, but about a year ago our chief engineer, John Black (M.I.T. '26) was trans-

ferred back to New Jersey. This left Bill Snyder—of the class of 1928—and myself as the nucleus of the M.I.T. club of the future. Bill is manager of the Big Jack Manufacturing Company, and became the father of a bouncing baby girl about a year ago. His address is 317 4th St., Bristol. . . . This is a very friendly community. My interest in it is evidenced by the fact that I am a member of the Elks, Moose, American Legion, Chamber of Commerce, Rotary, and on the boards of the local hospital, Virginia Manufacturers Association, and (should I mention it?) Bristol Concert Ballet Association." Well, I think you should mention it, Andy, and thanks for the letter. . . . Andy's address is 524 Glenway Ave., Bristol, Va. . . . I have one other new address this month: **John A. Swift** has moved from Westfield, N.J. to 11 Surrey Lane, Branford, Conn. 06406.—**Joseph S. Harris**, Secretary, Masons Island, Mystic, Conn. 06355

'28

A prosperous and lively New Year to you all. Try to be patient with us as we bring order to a cluttered and confused desk, covered with notes, letters and news clips relating to the very important members of the Class of '28.

Course I men will be interested in a brief note from **Arthur Robinson**, 4 Euclid Ave., Delmar, N.Y., which says, "Retired May 13, 1965, from U. S. Bureau of Public Roads, New York Division (bridge engineering)." Art was never one to waste words, but we hope he tells us how he spends his time in retirement. . . . A change of address form from the Alumni Register notifies us that **William S. McClintic** now resides at 604 Park Ave. North, Winter Park, Fla. 32789. We assume that Bill has retired after a lifetime in New York City. After a few months at Winter Park, he, no doubt, will join the professional golfers' tournament. We hope to have more on Bill within a month. . . . A note from **George Hoffman**, 2525 Carousel Drive, Springfield, Ohio, says, "I have been chief electrical engineer of the White Superior Division of White Motor Company for several years. I would like to hear from others in the southwest Ohio vicinity." This request by George should prove extensive readership of the Technology Review in southwest Ohio.

From Capt. **Desmond S. Shipley**, 73 Davis Rd., Port Washington, N.Y., we quote, "I haven't made any speed records lately, but I am still pushing the Boeings between New York and the west coast for American Airlines. I hope to retire soon, and I hope to see you all at our fortieth." May we remind classmates that Ship plans to retire to southern California and Tahiti. . . . **A. R. Rogowski**, associate professor of mechanical engineering at the Institute, was among 50 of the nation's top engineering educators who conducted a week-long, behind-the-scenes study of the Ford Motor Company in June. Purpose of the 1956 Engineering Forum was to emphasize the opportunity and challenges open to qualified engineering

graduates coming into the automotive industry. . . . A news release from Penn State dated last May informs us that Dr. **M. R. Fenske** of our class, presently head of the department of chemical engineering and director of the petroleum refining laboratory of Penn State University, was awarded the Redwood medal. This medal was established to perpetuate the memory of Sir Boverton Redwood, one of the most distinguished of the early petroleum technologists and the founder-president of the Institute of Petroleum.

Most of these notes are a year old, and we blush to repeat them, but we do get little news from members of the Class of '28, and for that reason alone we must publish what we have. For instance, in the April, 1965, issue of *Industrial Water Engineering*, **Richard D. Hoak** published an article on "Hot Water . . . A Growing Industry Concern." We learned from an introductory paragraph that for the past 31 years Richard D. Hoak has been professionally engaged in the field of water supply and stream pollution control. He received his B.S. and M.S. degrees from M.I.T. and his Ph.D. from the University of Pittsburgh. He has worked as a chemist and bacteriologist for the Lancaster, Pa., Water Department; district engineer for the Pennsylvania Department of Health; and since 1940 he has been a Senior Fellow at Mellon Institute, where he conducts research on water resources, industrial waste treatment, and the effects of waste on water quality. . . . We were recently notified by the Weyerhaeuser Company of New York City that **Robert J. Proctor** had been appointed a section leader in the company's expanded paper research and development center at Fitchburg, Mass. Bob joined the Weyerhaeuser Company in 1961 and held the position of development engineer in Fitchburg. Before this he was with Bauer Bros., Springfield, Ohio, as assistant director of engineering; he was assistant to the executive vice-president in Eaton-Dikeman Company, Mt. Holly Springs, Pa.; held the position of general manager at the West Jersey Paper Manufacturing Company, Camden, N.J.; and prior to this he was with Fitchburg Paper Company, Fitchburg, Mass., as technical superintendent. . . . Apropos a news item from Jim Donovan to the effect that **Bill Archibald** has been appointed Executive Vice-president of Jones Laughlin Steel Company, Ralph Joep later added that his correct title is "Administrative Vice-president." His responsibility is the supervision of engineering and planning as well as research and purchasing. Bill had previously been vice-president—engineering and plant. And a postscript via Cambridge correspondent James Donovan says, "Bill Archibald's wife has been at Radcliffe, taking some special courses. We have had the pleasure of seeing her several times." . . . All you readers of *Barron's* Weekly probably noted that our own **John Stack** was featured on the front page of the August 16 issue in a comprehensive article on the controversial F-111 Air Force—Navy fighter plane. The article quotes John and describes him as the "Father of the DFX" and now vice-president and director of Republic

Aviation: "There could have been a work statement on the variable-wing practical fighter plane in 1960. They could have been flying prototypes at least by 1963. Here you are just now flying prototypes in 1965." Those interested in the remainder of the article of and by John can secure a copy from *Barron's*. . . . We have other news, in particular a letter from **Ken MacKenzie**, but these will have to wait until next month.—**Hermon S. Swartz**, Construction Publishing Co., Inc., 27 Muzzey St., Lexington, Mass. 02173.

'29

This month's news comes with the start of the New Year and with it our best wishes to all for good health and much happiness throughout the entire year. . . . In late October I received a most interesting postcard from our good classmate **Hunter Rouse**, which we quote herewith: "Just to prove that I'm not in Liberia. This is Irkjtisk, a bit north of Mongolia. Oddly enough, the hotel here is the most modern of the six Russian ones I have been in. The country is far ahead of where it was when I first saw it four years ago. It's advancing almost as fast as Yugoslavia!" Thanks, Hunter, for thinking of us while in a spot as remote as this. . . . From the Alumni Register, we are most sorry to learn of the death of **Rolf Martens** of Woodstock, Vt., on July 27, 1965.

Now, let's hear what our classmates from Connecticut had to say in their questionnaires: **Charles Bacon** is self-employed in Middleton, where, with his sons, Bill (M.I.T. '57) and John, he is in the engineering and contracting field. In his leisure hours he enjoys outdoor activities, especially water skiing. . . . **Mirko Paneyko** resides in Fairfield and is chief engineer, MP Engineering Company. Since 1930 he has been engaged in design and manufacture of very high fidelity audio equipment. Tennis and sailing are his favorite hobbies. . . . **Larry Hamlin** of Cos Cob is currently teaching mathematics at Norwalk State Technical Institute in Norwalk, which is a fulfillment of something he has always hankered to do—quite an undertaking, considering Larry has been in the oil business for 32 years, from which he retired in 1963 as Executive Vice-president of Mobil Petroleum Company, a subsidiary of Socony Mobil. . . . **Floyd Buck** writes from Hamden and is engineering manager of United Illuminating Company, of New Haven. He sums up his own story as "just normal." . . . **Bill Young** lives in Essex and is president of New Haven Heat Treating Company. His resume shows a list of previous positions held, all of which were devoted to the field of gas as a consultant. . . . **Robert Gray** is president of Gray and Prior Machine Company in West Hartford and his son Robert III is also an M.I.T.'er. . . . With General Foods Corporation since graduation, **George White** of Greenwich is operations manager of Bird's-Eye. His ca-

reer with General Foods included several years in Canada and a brief residence in Geneva, Switzerland. . . . **Norman Wickstrand** of Harwinton is employed as a mathematician at Torrington Company in Torrington and continues with his field of interest as a lecturer in mathematics at Torrington Branch of the University of Connecticut. . . . In **Newell Mitchell's** sketch, which is next on the list, he gives us further information about Norman when he says, "Norman Wickstrand is fellow member of Connecticut Chapter Appalachian Mountain Club and Litchfield Mills Audubon Society. I see him often on various excursions, walks and meetings. He is a good amateur naturalist." As for Newell Mitchell himself, he is a self-employed consultant, having worked with Chase Brass and Copper Company, for 29 years; two years on special research on electroplating for a small company in Waterbury; then three years as consultant for Bridgeport Brass Company. "Last two years have taken interesting consulting jobs, while managing an investment program which started as a hobby or sideline and finally produced more than I could earn working for anyone." Newell lives in Waterbury, and also mentions occasionally meeting **Ray Shriver** of Bellwood, Pa., on Alumni Day. . . . From Glastonbury, we hear from **Tom Doherty**, who is staff engineer, Hamilton Standard Division of United Aircraft Corporation, and his resume contained the following views: Having cut my professional teeth on stick-and-wire airplanes, I now find myself being dragged willynilly into the space age. In recent years most of my time and energy have been spent in the field of 'political-fiscal' engineering—otherwise called dealing with government agencies—which was not taught at M.I.T. in our time. As a result, approaching retirement can be faced with a certain degree of equanimity." . . . More from the Nutmeg State in the next issue, but, again, may I wish you all the best for the New Year.—**John P. Rich**, Secretary, P. O. Box 503, Nashua, N.H.

'30

Over the past five years, as names came up on the class list, I have been sending information forms to those of our classmates who live and work in communist China. As might perhaps be expected, these forms have in general failed to elicit a response. However, the first response from the mainland of China has now been received. It is from **Ching Yang** who is working as an electrical engineer at the Cotton Spinning and Weaving Company, Bureau of Textile Industries, Shanghai. Ching's form was forwarded to me by his daughter Betty who, with her husband James Wang and their children Gary and Lisa, lives in Evanston, Ill. Betty is librarian at the Skokie Public Library and her husband is a student at Northwestern University. In addition to daughter Betty, Ching has two sons; George, who is a sophomore at National Taiwan University; and Peter, who is an

engineer at the Cotton Spinning and Weaving Company in Taipei, Taiwan. Ching asked particularly about **Adolf Kruming**, but I was unable to supply any information. If any of you know Adolf's whereabouts, perhaps you could forward the information to Ching at No. 11, Lane 18, Gao-an Rd., Shanghai, China. . . . As a postscript to the report in the June Review of **Carl Franz'** death in an Eastern Airlines crash last February, we have at hand a letter from Joe Preble giving further details. Carl had been associated with General Chemical Division of Allied Chemical Company since his graduation. At the time of his death he was research consultant with headquarters in the G.C.D. Laboratories at Morristown, N.J. He was survived by his wife Esta and three children: a daughter Carol, who with her husband and one child lives near Pittsburgh; a son Eric, who completed dental school last June, and with his wife and one child lives in Philadelphia; and a daughter Enid, still in college. . . . **Manny Birnbaum** recently stopped in to see me during the course of a trip to New York and we had a pleasant chat about old times. He is president of Hart Chemical Ltd. and Argus Chemical Canada Ltd., both of Guelph, Ontario, where the Birnbaums live. He has become a Canadian citizen. The Birnbaums have three sons: John, who works for Hart products; Robert, who is a first year medical student at University of Western Ontario and Peter, who is a high school junior. . . . Incidentally, I hope that more of you will stop in to see me when you are in New York. Since my office is in the mid-town area, a brief chat can sometimes be sandwiched in between your appointments. . . . It has been announced that **Lawrence Anderson** will succeed **Pietro Belluschi** as dean of the M.I.T. School of Architecture. . . . **Cecil Dunn** was one of the principal speakers at the 1965 convention of the National Association of Refrigerated Warehouses. He spoke on ways of preventing contamination of frozen foods by salmonella bacteria.

Changes of address: **Henrik M.C. Luykx**, 4301 Mass. Ave. N.W., Washington, D.C. 20016; **L. S. Linderth, Jr.**, 2220 Whitley Dr., Durham, N.C. 27707 —**Gordon K. Lister**, Secretary, 530 Fifth Avenue, New York 36, N.Y.

'31

Best wishes to everyone for 1966 . . . our 35th reunion year. Be sure to make a note of the dates: Friday, June 10, to Monday, June 13, and the place, Wianno Club on Cape Cod. Your committee, with **Ken Germeshausen** as general chairman, has had several meetings and is well along with the plans. More later. . . . While driving back from Los Angeles this fall, Louise and I spent a very pleasant weekend with Colonel **Fred Elser** and his wife, Margaret, in Palm Springs, Calif. Fred is retired and enjoying life to the full. Fred continues to be as enthusiastic about ham radio as ever and Margaret is making a name for herself at bridge.

Enjoyed talking with **John Elting** via ham radio. John sounded well—and we are hoping to get together soon. While talking with **Ralph Davis** recently, I learned that **Claude Machen** has been ill but is well on the way to recovery now. . . . Judging from his appearance at luncheon a few weeks ago, our prexy, **Howard Richardson**, is enjoying his new role as a management consultant. I've never seen **Howie** look better. . . . **Phil Bourne**, president of the Boston Society of Architects, has been appointed a member of the Massachusetts Art Commission by Governor Volpe. . . . More honors for **Gordon Brown**—election to the National Academy of Engineering in recognition of his outstanding contributions to engineering theory and practice, and recipient of the degree "doctor technices, honoris causa" from the Danish Technical University. Congratulations, Gordon. . . . **Charles Bicking** is manager of the mathematics branch, Research and Development Division of The Carborundum Company. . . . **Bill Jacobs**, class treasurer and president of Jet Spray Corporation, gave a talk on new ideas for capturing the market of the 1970's at a meeting of Sales and Marketing Executives Club of Greater Boston. Wish I could have been there. . . . A recent article in the Camden, N.J., Courier Post tells of **Al Coleman's** appointment as assistant to the director of the South Jersey Medical Research Foundation. . . . **Sam Arlen**, architect, received a very flattering write up in Modern Floor Coverings for his remodeling of the Atlantic Carpet Company, in White Plains, N.Y. . . . Until a month or so ago when I received a few pages from the March 28, 1965, Boston Sunday Herald, I didn't realize that **Ralph Davis** and Helen were so interested in horses. Their home looks lovely, and I imagine Ralph and Helen are kept busy with two french poodles, nine show horses and three cats. . . . New addresses received since the last class notes are: **Edmund G. Blake**, 17 Happy Hollow Rd., Wayland, Mass., 01778; **Patrick J. D. Harney**, Old Forge, N.Y., 13420; **George V. Kropp**, 641 Boston Post Road, Sudbury, Mass., 01776; **Lorenzo Manzanilla, Jr.**, Ave Mexico 70, Colonia Del Carmen, Coyacan, Mexico 21 D. F., Mexico; **Theodore C. Morrill**, 6 Islington Road, Auburndale, Mass., 02166; **John A. Norton**, 143 Merrick Road, Lynbrook, N.Y. 11653; **Louison C. Page**, 88 Pownsend Ave., New Haven, Conn. 06701; Col. **Charles Robbins**, 149 Rockville Rd., Holland, Pa. 18966, **Robert Sanders**, Route #1, Box 263, Annapolis, Md. 21401. . . . Remember the Reunion dates, June 10 to 13, and drop us a line once in a while telling of your activities.—**Edwin S. Worden, Jr.**, Secretary, 35 Minute Man Hill, Westport, Conn.; **Gordon A. Speedie**, Assistant Secretary, 90 Falmouth Rd., Arlington, Mass. 02174

'33

Well, folks, when you read this sermon, Santa will have come and gone, and there are some who might well be glad of

it. I have before me, a letter from our estimable president, Edw. S. Himself. Now, here is a fellow who practices what I preach; he gives me a few personals. **George Ropes** pulls a fast one, and somewhat of a surprise move by resigning from his VP job with Acme Fast Freight, and has taken a job teaching science at White Plains High School, although he retains a consulting connection with his old firm. Why don't some of you fellows think of something like George did, and then do it, as George also did? I, personally, think that this move is just fine, and about what one might expect from a great chap like George. I bet Caty has a finger in this thing, somewhere. Anyhow, the Ropes have a Belgian Student Exchange girl living with them, who expects to go into engineering school shortly. We hope it is M.I.T., of course. The Ropes now have one child out of college, one about to get out, one just entering, and the fourth with five years to go. That, I contend, is progress. Good for the Ropes, fine folks all. . . . Ed ran against **Werner Bachli** recently, and finds that Werner finally succumbed, and has been married for several years, which, you may believe me, is real news. That fellow had no such intentions last time we saw him. Bach is with Westinghouse International. . . . **Garby Garbarino**, with I. G. E., had nine children last time he reported in. . . . Edw. allows that **Westy Westaway** is the only bachelor left in 1933. How about it, fellows and girls? Ed is not counting any of our career girls who have elected to remain single. If you folks know of anyone still a bach, have him drop me a line, or send a wire. Edw. spent the summer at Candlewood Lake, Conn., and is now in the process of starting a new business; "Electrostatic Equipment Corporation." He plans to manufacture equipment to coat objects with plastic powder instead of paint, applied electrostatically. . . . Ed suggests that I start plugging for a reunion at M.I.T. for the class, at the time of the next Alumni Day. I favor a reunion somewhere, but not at Cambridge. I still think that, given enough advance notice, a local reunion could be held most anywhere, and fellows like **Bill Rand**, Calif., and **Duke Selig**, Texas, and **Ellis Littmann**, St. Louis, are raring to go on just such a local project. By the way, Ellis seems to be hiding his light under a bushel basket or something. Not a word out of him for a year or so. Let's have the news, Ellis.

Now comes **Cal Mohr**, my true and faithful correspondent. I get more personal news from Cal than from any three other men. Cal is indeed fortunate in that he does get around; so does many another, but he makes a note of whoever he sees and talks with, and then he lets me in on it. By the way, this job of mine was taken on with the understanding that I was elected for a term of five years, and, folks, Cal Mohr is the man to take over at that time. No other is even close to him as top candidate. Keep the man in mind. Cal saw **Ellis Littmann** in St. Louis in August and, it seems that Ellis had just finished bargaining with the various unions in his shops. It appears that, had I attended the Class Officers' Conference,

I might have seen Ellis. I did not, because of illness. Ellis mentioned some trips to the Bahamas, over a period of time, and of seeing **Walt Skees**. Cal also heard from Walt, who allowed that he was making an inspection trip to Turtle Cay to see his cottages before taking off for Spain. The cottages, by the way, had been exposed to the fury of Hurricane Betsy. . . . Cal also hears that **Morris Cohen** was chairman of the Alumni Seminar Committee that took place directly after the Class Officers' Conference. These two events are now, or so it seems, fixtures, and some class officers attend both. Cal and **Skee Sysko** apparently got together, and pooled their orders for nylon handles for filter presses, so they could, together, take advantage of DuPont's minimum order requirements. Skee's daughter, in Washington, D.C., was, at the time, about to make him a grandfather. His son is now in the armed services, after working for a time with IBM. . . . **Pete DuPont** writes Cal that he is, or was then, on leave from his company, and expected to be back on the job in four to six months. Pete, we always enjoy hearing from former officers, and we would be especially interested in what fellows like you do on leaves of absence (if not confidential). Pete is very active in community and charitable work, and was president of the local Community Fund. . . . **Mal Mayer** and Mrs. Mayer attended the European Brewery Congress in Stockholm, in May. Mal, it seems, will be in Chicago October 25 (this week), for the Brewing Industry's Exposition, and Cal will spend some time with him, and report back. Maybe he can shame Mal into writing. . . . **Bob Smith's** employer, The Pfaudler Company, installed the world's largest Lauter Tank for brewing beer, in the Genesee Brewery, Rochester, N.Y. We seem to have a lot of classmates in this particular industry. . . . Cal makes mention of **George Stoll**, with a few facts covered heretofore in this column; to review, George sold his business long since on account of his health, but is back at work as sales manager for a wholesale food concern, hale and hearty. . . . Cal is trying to assemble information on **Bob Seyl**, so we will hold off until the reports are all in. Does anyone notice that these characters, who like to see their names in print, do no writing to the Secretary? They visit with Cal, and let him do the writing. . . . Cal also made a trip to Salt Lake City, but found no time to look up classmates, which may be forgiven, as this seldom happens to Cal. He also mentions that he visited the Warner and Swasey exhibit at the Machine Tool Show in September, but didn't see me. Well! Well! So! I did receive a wire from one of our VPs asking where the heck I was, and why was I not occupying the room that I had asked to have reserved for me. I generally attend the International Livestock Show, and, I surely will arrange to visit with Cal then.

Jim Turner, our estimable Executive Vice-president, exchanged a couple of letters with me, mostly about the Robert M. Kimball Scholarship Fund. Until next July all gifts to the Alumni Fund by 1933ers will be credited to this fund un-

less otherwise specified. The fund has not reached its goal as yet, and classmates may always specify gifts are to be credited to the fund, even after July next. . . . I would like to put in one plug for a current project of mine: a personal campaign to get more readers for The Review among classmates. Every classmate who reads The Review regularly is either a member of the Alumni Association, or a contributor to the Alumni Fund. I would like to ask each and every reader to become a member of a committee at large for the purpose of increasing the number of readers, by 300 more, if possible. Will each of you, upon talking with a classmate, make it a point to ask him if he is a regular reader of The Review, and, if he is not, urge him to become one, by making a contribution to the Alumni Fund? This should be easy and not embarrassing. There is no harm in asking, and surely none in making such a reasonable suggestion. It is a crying shame that over half the names seen mentioned in this column are not found on the subscription list.

As I resume writing this historic document, it is November 4 and the Alumni Office likes to have these notes in their hands by the 15th of any month. But they have erred by not sending me the press clippings, and I have chided them a bit, so I must send the stuff in, as I wish to leave town (for Florida). . . . I do have word from **Bob Winters**, who has made another speech in Toronto. This one was a fine dissertation on Canada and the U.S.; similarities and differences, politically, socially and economically. The speech was tailored to fit a group of Canadian and American businessmen in solemn conference, and Bob did his usual good job. Why not write him for a copy?

I was, and you will be, also, saddened to hear from Mrs. **Joe Gora**, of Canton, Mass., who tells me that Joe died as the result of a bad auto accident in September. Joe's Course IV friends will be, also, more than a little saddened by such an untimely happening. That makes two almost alike in just a couple of months. (See previous notes, this semester.) I am sure that you all will join me in sending Mrs. Gora our sincere sympathy. A married daughter, and a son who lives at home survive Joe. . . . A change of address came in from **Red Williams**, Exeter, 29, M.I.T. 1933, Course II. It took an added Zip Code number to get a word out of Red, after 30 odd years. These fellows are sure talkative. Red even goes by here many times every year to his summer place in Maine. Does he stop? No, the bum. He will, though, if I have to go after him. That's it, folks, until February notes are due.—**Warren Henderson**, Secretary, Box 14, Exeter, N.H.

'35

I am a novice at soliciting news for class notes, and a poor reporter to boot! But the job has to be done: in order to stimulate you men to write, I offer a prize for the most newsworthy letter which I

may receive before February 15. Please go for the bait, fellows, and relieve my anxiety about filling this column! . . . **Ned Collins** is back in Chicago. He was in Boston for several months, but now prefers Northern Illinois. . . . **Gene Newell** lives in Hudson, N.H.; he is comptroller and assistant treasurer of the International Tape Box Machine Company of Nashua, N.H. . . . **Louis Fong** is still in Washington, but in a new capacity; he is now Deputy Director of Meteorological Programs at NASA and worries about meteorological satellites such as TIROS and NIMBUS.

Ed Loewenstein sent me a lengthy letter (bless him!) and in the category of personal news wrote: "My architectural office has gone from a medium-sized affair to a larger deal and the bigger we get and the more work we do, the broker we are. Our main projects now are for the government (Army, Navy, GSA), industrial plants, schools, hospitals and institutional work, with almost no residential work (which is the most fun, if you like it). I kept up my part-time teaching job, until this year, in the art department of the University of North Carolina in Greensboro, N.C., but have to drop it due to office pressure. I'm still planning to peddle my course in history of architecture to some local institutions in my old age and am using this as an excuse for a foreign trip (to make slides) each year. I think I have about 10,000 slides, of which about 300 are usable. My two daughters are still rabid horsewomen and I'm swept into the horse show circuit with them in the summer. Laura, my oldest, is a sophomore at Goucher College, and Jane, my youngest, is a senior at Dana Hall in Wellesley. Last year at Father's Day, I spent some time with **Paul Daly**, whose daughters go to Dana and are the ages of my children and good friends. Paul looks great and I know we shall miss "Father's Day at Dana" when our daughters graduate this year. We also had the real pleasure of seeing my nephew, Jim Falender, and the Tech Varsity Crew mop up all their opponents at the Saturday crew races on the Charles in early May. I've just gotten back from a vacation and making slides in England and Scotland with Frances and my sister and brother-in-law, so I'll have to quit and go back to worrying about architecture."

Allan Mowatt our class president and golf editor reports the following: "The finals of the 5th Annual Class Golf Tournament were held at the Wellesley Country Club between **Bob Anderson** and **Ham Dow** with **Bob Forster** a playing referee. Ham was three holes down at the turn then proceeded to even the match by winning three holes in a row. He went one up on the 15th and Bob evened the match on the 17th. They both bogeyed the 18th to remain all even and go into sudden death. Ham never got a chance to use his stroke on the 20th because his putt for a tie on the 19th slid by the corner and Bob won the championship one up on the 19th. **Art Marquardt**, 1964 champion, retains the Presidential Cup until the end of this year, then turns it over to Bob Anderson to hold for a year.

With a different champion in each of the first five years it looks as though it would be a long time before anyone wins the cup three times and retains it permanently. The Consolation Flight this year ended with **Dick Bailey** the winner by virtue of his playing on a USGA rated 72 course. **Dick, Paul Daley** and **Al Johnson** all tied with net 76's in the finals."—**Irving S. Banquer**, Co-secretary, 20 Gordon Road, Waban, Mass. 02168; Regional Secretaries: **Arthur C. Marquardt, Jr.**, 178 Mt. Vernon St., Dedham, Mass. 02026; **John H. Colby**, Rt. #1, Box 91A, Islamorada, Fla. 33036. **Edward Loewenstein**, 444 Cornwallis Drive, Greensboro, N.C. 27408

'36

Almost as soon as you read this you will be receiving information about our 30th reunion scheduled for the weekend preceding Alumni Day, which is June 14. I will leave the detailed information to come as a surprise—just save the weekend! . . . In the course of a telephone conversation about reunion plans **Frank Berman**, reunion chairman reported that his son **Bennett** is a sophomore at the School for International Service of American University and that his daughter **Rebecca** is a junior at Huntington (L.I.) High School. **Frank** has gone into business for himself as a computer consultant concerned with all phases of the field except design. He works mainly out of his home but has an office in the Pan Am Building in New York City. . . . **Bob Gillette** represented the Institute at the inauguration of General Barksdale Hamlett, USA (Ret.) as the President of Norwich University on October 30. **Bob** must have been a spectacular figure in full academic regalia. . . . The Alumni Office reports that **Homer Haberland**, who was with the U.S. Division of Commercial Fisheries, died on September 16, 1965. No details are available. . . . There are many address changes as usual but I am omitting those which involve only the addition of a zip code. . . . Our president **Jack Austin** is now living in Western Springs, Ill., at 3922 Grand Avenue (60558); **Arthur Carota** is at 1401 Hilltop Road, Westwood Hills, Wilmington, Del. 19809; **Edward G. Howard**, 1209 Berdan Ave., Toledo, Ohio 43612; **Stan Johnson** in Pittsburgh at 233 Longview Drive (15228); **Robert Leventhal's** Beacon Construction Company is in Allston, Mass., at 100 Hano Street (02134). I have two zip code numbers for **Leonard Mensing** and I will proceed on the assumption that the more recent one is correct. His address is 4401 Sheraton Road, Ottawa Hills, Toledo, Ohio 43615; **Philip Ober's** is 158 Brompton Road, Garden City, N.Y. 11530; **Francis Peterson** is at 3923 Margate Drive, Richmond, Va. 23235; **Walt Squires** is back in New Jersey at 2041 Hill Top Road, Westfield (07090); and **Len Stoloff** has moved from Islington, Mass. to 5505 54th Avenue, East Riverdale, Md., 20840; **Fletcher Thorton's** home address is 26 Lenox Road, Summit,

N.J. 07901; and finally two new home addresses: **Robert H. Walker** at 5422 Hawthorne Place, N.W., Washington, D.C. 20016; and **Edwin B. Worthen, Jr.** at 35 Dexter Road, Lexington, Mass. 02173. . . . I hope that these notes find you all hale and hearty after a happy holiday season and not so depleted in the pocket book that you fail to remember the Alumni Fund and our upcoming reunion!—**Alice H. Kimball**, Secretary, 20 Everett Avenue, Winchester, Mass. 01890.

'37

Joe Engel has recently been appointed general superintendent of Republic Steel Corporation's South Chicago plant. **Joe** joined the metallurgical department of Republic Steel's Buffalo steel plant in 1939 and was appointed mill metallurgist in 1942 and field metallurgist in 1944. In 1947 he was named supervisor of metallurgy, and he became assistant chief metallurgist in 1953. In 1961 he was appointed chief metallurgist at the Buffalo plant, and he was transferred to Chicago in July 1963 as chief metallurgist. **Joe** is a member and former chairman of the American Society for Metals and lives with his wife at 18909 Louise Dr. in Lansing, Ill. They have three children. . . . **Paul A. Vogel** reports a change in employment status as he is now vice-president of John P. Maguire and Company, New York, one of the largest factoring companies in the industry. . . . **Francis D. Houghton** is now manager, Analytical Services, Analtech, Inc., Wilmington, Del. . . . **Cam Mitchell** is executive vice-president of Southern States, Inc., Hampton, Ga. . . . Recently, **Rose** and I helped **Norm** and **Elvie Birch** celebrate their 25th wedding anniversary. Since I had been their best man, it was a particularly memorable occasion. I am sure many of our class have celebrated or will be celebrating a 25th wedding anniversary. Let me know about it when you write your notes to your secretary.—**Robert H. Thorson**, Secretary, 506 Riverside Ave., Medford Mass.; **Prof. Curtis Powell**, Assistant Secretary, Room 5-315A, M.I.T. Cambridge, Mass.; **Jerome Salny**, Assistant Secretary; Egbert Hill, Morristown, N.J.

'38

Award for the most industrious correspondent of the year goes to **Paul Black**, whose recent communications add up to the following Sudbury Journal: "Let me fill you in on Alumni Day activities. I was not able to attend the luncheon but did get to the cocktail party, banquet, and Pops concert. I understand that **Harold** and **Henrie Strauss** were at the luncheon but could not stay for the evening activities. They had arrived several days earlier and took in the commencement exercises where their son received a degree. The Class of '38 was well represented at the

banquet by **Don** and **Phyl Severance**, **Jack** and **Eileen Bethel**, **Lou** and **Sandy Bruneau**, **John Glacken** and his attractive daughter, **Jocelyn**, **Dave Morse**, **Dick** and **Virginia Henderson**, **Milton** and **Carolyn Wallace**, plus **Ruth** and myself. **Col. Milt** was taking off shortly after Alumni Day for a change in assignment to Fort Monroe, Va. (By the way, I stayed at the Chamberlain Hotel last year during a conference at the NASA Research Center at Langley Field. One evening I walked around the post and for those who attended ROTC camp in 1937 with me, things have not changed much except that the big guns are all gone. By an odd coincidence, I had worked with **Milt's** brother, **Harold**, for a number of years, but never realized they were brothers until I saw them together at the cocktail party.) Many will remember **Walt Pulsifer** who started in our class but graduated with the architects a year later. He is now with the **Chester Wright** architectural firm in Waltham. **Walt** and I exchanged many reminiscences, especially those connected with the track team and the never-to-be forgotten **Oscar Hedlund**. I also ran into **Walt Helmreich '40**, who is related to our class through his marriage to **Ira Lohman's** sister. As usual it was a very enjoyable evening—and should be a potent drawing card for scheduling all possible trips to Cambridge over that early-June weekend. It is too bad that it takes place only once a year."

With indefatigable attention to detail, **Don Severance** backstops **Paul** by noting that our representation at the luncheon included not only **Hal** and **Henrie Strauss**, but also **Harold** and **Mary McCrensky**, **Homer** and **Sofia Oldfield**, and **Ed True**.

Picking up the thread several weeks later, **Paul's** Journal continues: "I attended part of the Alumni Officers' Conference on September 10, and was delighted to meet a number of men from our class. **Ed True** broke away from his architectural endeavors long enough to attend some of the sessions and have lunch with us. **Lou Bruneau**, who has been commuting between New York and Cape Cod all summer, ferried his son to the Institute and took in the conference while he was here. **Paul Des Jardins**, who is doing considerable engineering planning for Worthington Pump Company, attended the session and was staying over for the Alumni Seminar. **Paul** and I felt we had much in common in the planning area. **J. J. Phillips**, who is still with NASA Headquarters in Washington, arrived in the afternoon and at least joined us for dinner. **Bob Johnson** also joined us late in the day. His Factory Mutual Insurance Company is putting its 'spare' cash to work by building office buildings along Route 128 (one of whose tenants is my own company, Sylvania). And, of course, **Don Severance** was one of the star performers at the conference. As you may have heard, we had the cocktail party and banquet in the new student center which is rapidly nearing completion. In fact, the building contractors' personnel were leaving when we arrived! Despite the close call, we had a delightful time in this most welcome addition to the Institute's facilities. Unfortunately, I was not

able to attend the entire conference but enjoyed tremendously hearing of the many changes at the Institute, directly from those who are making the changes." With one more "tidbit" Paul notes, "Maj. Gen. **Austin W. Betts**, who received his Master's degree with our class, is now the Deputy Chief of Research and Development for the Army. I met him about five years ago when he headed the Advanced Research Projects Agency. I did not realize at the time that he was a fellow classmate, but was greatly impressed; he is very alert and a real gentleman."

Ash Shapiro tops the academic news of the year, with his appointment in June as Head of the Department of Mechanical Engineering! Dean Gordon Brown, in announcing the appointment, said, "Our search for a new Head of the Department of Mechanical Engineering literally was worldwide and it is gratifying and reassuring to realize that our final selection, on the basis of qualifications, could best be made from within the ranks of this distinguished department. I am reminded once again of the international distinction of the department and its faculty in both engineering research and engineering education. Professor Shapiro himself has made many contributions to engineering education that are recognized both nationally and internationally. His skills in teaching and inspiring graduate and undergraduate students are widely known. More recently, he has received international recognition for the development of films as a teaching component in fluid mechanics instruction. The work of the National Committee for Fluid Mechanics Films, of which Professor Shapiro was founder and first chairman, has been so well received nationally and internationally that similar efforts have been initiated in other areas of engineering education." Ash has been Chairman of the Faculty, but asked to be relieved of this responsibility to carry his full load of teaching and research. Ash received the Naval Ordnance Development Award in 1945, and a War and Navy Department joint certificate in 1947. In 1956 he was the Akroyd Stuart Memorial Lecturer at Nottingham University, England. From the ASME he received the Richards Memorial Award in 1960, and the Worcester Reed Warner Medal in 1965. Congratulations, Ash, on being the first member of the Class of '38 to become an M.I.T. Department Head! Many of you have seen Professor Shapiro in some of those engineering and teaching films that Dean Brown commented upon, and I am sure you too were impressed with his histrionic prowess. Now that the decisions have been announced and implemented, I no longer consider it a breach of confidence to let you in on the timing of Dean Brown's announcement. Negotiations had been underway to sign Ash to a contract playing opposite Ursula Andress in several Hollywood spectacles—and therefore the situation was more competitive than first appeared! I congratulate Ash on his forthright decision to stay in the academic world, where he is having a much more constructive influence upon our sons.

With a great deal of sadness, we observe the death of **Ernest P. Neumann** on September 24. Ernie had been president of Lytron Inc., since its organization in 1959, and the Boston Globe in August observed the company's move from Cambridge to a new, one-story brick plant in Woburn. In forming Lytron with several associates interested in the manufacture of heat-transfer equipment, Ernie guided the company to a \$1 million sales level and 85 employees in five years. In an interview shortly before his unexpected death, Ernie commented: "We are different. Perhaps more tough-minded in our attitude toward making a profit. We have no new discovery and we are not backed by large amounts of risk capital. We are a solid, producing business with limited capital. We can be in, out, and gone before a big company makes a decision. But in cases where mass production is called for—well, that's not for us. Our way is to look at the need for a commercial product and then satisfy that need. That makes us conservatives!" Our sympathies to his wife Sylvia and their three children.

We are catching up on some of the happenings of the long, dry summer. **Jim Pollock** has been named assistant chief geologist, exploration, of The Hanna Mining Company. Jim had been director of geology of Calumet and Hecla Inc., where he was responsible for geological services and exploration activities in the U.S. and Mexico. Jim's headquarters remain in Michigan's upper peninsula. . . . There is an air of oriental mystery about the trip that **Harold** and **Henrie Strauss** made to Hong Kong etc., at the beginning of summer! Evidence to date includes only two items: A postcard that says "The M.I.T. '38 Club in Hong Kong is great! Tell you more in June when we arrive for Ed's graduation." Supplementing this is a clipping from the Bangkok World describing bridge construction and highway operation, as reported by **Uthai Voodhigula**, Director General of the Highways Department. Uthai is '38 Course I, and he has all the usual problems of Highway Departments: "Mr. Uthai also confirmed reports that toll will be collected on main highways like Paholyothin and Petchkasem highways in order to obtain additional money for the upkeep of highways, because the allocation in the annual budget is not sufficient for the purpose. Repairs to the highways, he said, annually cost about 300-million baht while the budget allocation is only 205-million baht. Cost of upkeep and repairs to one kilometer of highway is 50,000 baht, he said. As for criticism that buyers of cars already pay high import duty and registration fees, Mr. Uthai said that a toll of only three baht will be collected on private cars and that could not be considered much by persons owning cars."

Several authentic vignettes have come to us in that most satisfying of all forms—the author's own hand. **Ted Burke** reports, "Most importantly, I have bought a 110-acre farm in Leesbergh, Pa., for retirement. This will be the engineering approach to farming!" In trying to check out Ted's agricultural and political odds, I am stymied—I can't find the place. My

gazeteer of Pennsylvania, however, does not include towns below 100 population. . . . **Joe Pasternack** notes, "Recently promoted to assistant division manager, Aeronautical Systems Division, of Hughes Aircraft Company." Joe was formerly manager, Advanced Projects Laboratory, Space Systems Division. . . . **Gurdon Butler** reports: "Now independent consultant, and associate director of Metallurgical Services Laboratories, Sante Fe Springs, Calif." . . . **Eric Thrift** is general manager of the National Capital Commission, Ottawa—responsible for planning, improvement, and development of Canada's national capital and the surrounding area. "During the past year," Eric observes, "I have been president of the American Society of Planning Officials, the first Canadian to hold this post."

There are two final, sad announcements. We are advised of the death of **Edmond R. Nalle** in December 1964. No details. Also there is a note on the death of **Ralph H. Lebow** on last summer. Ralph was staff engineer, Fuel Systems, for Parker Aircraft Company, in Los Angeles. Our sympathies to Marcia and their two children.—**Frederick J. Kolb, Jr.**, 211 Oakridge Drive, Rochester 17, N.Y.

'39

Having telephoned in the brief news item of **Dick Feynman's** Nobel Award last month after the closing date, there are more details, courtesy of Martin Lindenberg, who clipped an Associated Press item from the October 22 New York Times: Richard Phillips Feynman . . . plays bongo drums at parties . . . camping and drawing are hobbies . . . teaches an artist friend physics and gets drawing lessons in return . . . worked at Princeton on problem of separating uranium isotopes in early stages of Manhattan Project . . . was group leader in theoretical physics at Los Alamos Scientific Laboratory and saw first test explosion of atomic bomb . . . taught at Cornell before joining Caltech in 1950 . . . studied Spanish before going to Brazil for lectures in 1949, discovered just before departure that Brazilians speak Portuguese . . . got himself a Portuguese dictionary to study on plane! And here's a noble (not Nobel) award of our own: it's a rare thirty-niner who makes this column three months in a row! Congratulations, Dick!

Speaking of frequency, **Leo A. Kiley** has been named here at least five years in a row. And as of August 20, 1965, it is as Brigadier General that Leo should be addressed. He is currently serving as commander of the Air Force Cambridge Research Laboratories, in Bedford, Mass. AFCRL is the largest Air Force laboratory conducting basic and applied research in the physical and environmental sciences. The promotion reflects increasing Air Force awareness of the heightened role of scientifically trained officers in the Air Force mission. General Kiley received his Ph.D. degree in nuclear chem-

istry from Ohio State University in 1952. Included in his accomplishments are two awards of the Legion of Merit for work in nuclear testing. . . . **John A. Chartz** (XV-Grad) Executive Vice-president of Dalmo Victor Company, Belmont, Calif., received a folksy writeup in the August 25 issue of *Electronic News*, sparked by his extra-curricular management of Wescon, the Western Electronic Show and Convention. John, off duty, is reported as a rancher who fits the Hollywood mold, "ruggedly handsome with well-tanned, well-weathered complexion, soft-spoken and modest, and exceptionally trim for a man approaching 50." He skis at Squaw Valley with his six children ranging in ages from four to 21, at his own ski lodge, and summers and non-skiing weekends he spends on horseback at his 150-acre ranch not far from Belmont. . . . **Philip D. Bush** (XIV and XIX) was honored at the September meeting of the Northern California Section of the Instrument Society of America, as "Industrialist of the Month." He is vice-president of power, nuclear, space, and defense projects for Kaiser Engineers in Oakland, Calif. He has had 26 years experience in the engineering and operation of steel, cement, aluminum, building materials, chemical, and nuclear plants. He has been a trustee of his local school district, president of the county branch of the American Cancer Society, President of the Oakland Symphony Orchestra Association, and member of the M.I.T. Educational Advisory Council.

Rear Admiral **Edward Alvey Wright** (XIII-A-Grad) has been appointed by Hawaii's Governor Burns to the Advisory Committee on Science and Technology. Admiral Wright, commander of the Pearl Harbor Naval Shipyard, heads the largest industrial establishment in Hawaii, with 5200 employees. As if that isn't enough to keep a good man busy, he is also Commanding Officer, Bureau of Ships Management Office, Western Pacific Area, and Industrial Manager for the 14th Naval District. In these capacities, his commands encompass almost one-third of the earth's surface, including responsibilities for scientific and defense projects in such places as Antarctica, Vietnam, Thailand, Korea, Taiwan, and many islands in the Pacific!—**Oswald Stewart**, Class Secretary, 3395 Green Meadow Circle, Bethlehem, Pa., 18017

'40

Many years ago I made reference to this column's vanishing like the Cheshire cat in "Alice in Wonderland." It looks that way again as news gets thinner and thinner. . . . **Jeoh Pei** gave the first in a series of eight lectures sponsored by the Howard University Department of Architecture in Washington, D.C., on October 15. . . . Lt. Commander **James Boulger** teaches space technology in the Naval Reserve Officers School in Salem, Mass.

As a final note, **Herb Hollomon**, the Assistant Secretary of Science and Technology in the U.S. Department of Commerce, received the American Society for

Metals Edward DeMille Campbell Memorial Lecture Award on October 20, 1965, during the Metals/Materials Congress in Detroit. Herb has been with the Department of Commerce since 1962, and prior to that was with General Electric for 16 years, first in metallurgy research and then as manager of metallurgy and ceramics research and as General Manager of the General Engineering Laboratory.—**Alvin Gutttag**, Secretary, Cushman, Darby & Cushman, American Security Bldg., Washington 5, D.C.; Dr. **Samuel A. Goldblith**, Assistant Secretary, Department of Food Technology, M.I.T., Cambridge, Mass.

'41

The Class of '41 can take pleasure and pride in the addition of a Nobel prizewinner, Dr. **Charles H. Townes**, to its rolls, as evidenced by the following excerpts from a letter dated November 1, 1965, from class president **Ed Marden**: "Dear Dr. Townes: I have been advised of your interest in being affiliated with the M.I.T. Class of 1941 and it gives me great pleasure to inform you of your acceptance as honorary member. Your membership was proposed at the last Alumni Day class meeting and confirmed by the Class Standing Committee this October. We are proceeding with plans for our 25th Reunion which is scheduled for June 9 through 13, 1966. Our Reunion, I believe, will establish several precedents by being two days longer, being held principally on campus, and having a seminar and lecture program for alumni and wives—which, incidentally, is being programmed by Nate Sage and other faculty members from our class. I do hope that you and your family will plan to attend."

Philip S. Lewis, Jr., represented M.I.T. at the inauguration of Milo A. Rediger as president of Taylor University on November 10, 1965. Philip resides at 2206 South Courtland Avenue, Kokomo, Ind. . . . Prof. **John Wulff** received the Albert Easton White Distinguished Teacher Award at the 1965 ASM Metals/Materials Congress and National Metal Exposition held in Detroit last October. John is presently professor of metallurgy at M.I.T. . . . Prof. **Stanley Backer** was chairman of a technical program on Fiber Surface Properties at the fall meeting of the Fiber Society held in Wilmington, Del., at the Hotel Du Pont last October.—**Walter J. Kreske**, Secretary, 53 State St., Boston, Mass.; **Henry Avery**, Assistant Secretary, 169 Mohawk Drive, Pittsburgh, Pa.; **Everett R. Ackerson**, Assistant Secretary, 16 Vernon St., South Baintree, Mass.

'42

There is precious little to report this month. **Dan Hulett** has been appointed regional manager of technical recruiting for Union Carbide's chemicals, olefins, plastics and silicones division for the Kan-

awha Valley and southeast regions. He has been with Carbide since graduation. He was kind enough, incidentally, to send me a note about **Dick Little**, Course II, who was appointed manager of plant engineering at South Charleston. . . . The only other item I have is a copy of an article written by **Ed Holland**, entitled, "Principles of Simulation," which was printed in the *American Behavioral Scientist*. Ed has directed simulation projects at M.I.T.'s Center for International Studies, and is now with the Simulmatics Corporation. . . . Does anyone read this column? I certainly wouldn't know so from the amount of correspondence I have had in recent months.—**John W. Sheetz**, Secretary, Harvard Business School, Boston, Mass. 02163

'44

I heard from **Paul Heilman** by telephone on November 2 a few days after he returned from his month-long trip to Chile on behalf of the Copper Development Association. We discussed the class notes and he confirmed the reports from **Burt Bromfield** and **John Hull** that increased travelling and related activity by Paul made it necessary for him to seek relief from the job of class secretary for at least the current publication year. Paul wrote these notes for six years as class secretary following a prior period of service as assistant class secretary to **Burt Bromfield**. Thus it appears that a sabbatical year for rest and travel is in order for Paul Heilman. Paul said he was forwarding three clippings received through the Alumni Association together with one note submitted on the Alumni Fund envelope form.

For the second month running we have clippings concerning **Sanborn C. Brown**, VIII, Ph.D. Last month his name appeared in this column because of a lecture he delivered on science and religion. This month we have a clipping from the Dartmouth Alumni magazine of July 1965 in which Dean Brown reviews the Unified Field Theory of Professor Miles V. Hayes. Dean Brown is not convinced that Professor Hayes has succeeded where Albert Einstein and others failed in attempting to develop such a theory. . . . By way of the Alton (Ill.) Telegraph of August 19 we learn that **Louis William Maxson, II**, has been promoted to superintendent of engineering and maintenance at the brass mill of Olin Brass, East Alton, Ill. Bill, a native of New Hampshire, had been employed in the brass operations at the New Haven, Conn., plant of Olin-Mathieson Chemical Company since 1947. . . . While many of our colleagues strive to harness the energy of nature and to convert the minerals and raw materials to forms required by a society of technology, others struggle to prevent or control the spoilation of our environment by our industrial activity. From the Hartford Courant of September 17 under a photograph captioned "Air Pollution Expert" we learn that **John E. Yocom, X**, formerly of Mill Valley, Calif., and now of 12 Fox Den

Road, Simsbury, Conn., has been appointed a senior research engineer in the Travelers Research Center. Douglas L. Brooks, '43, President of the research firm, announced that John would be responsible for air pollution studies and surveys. John moved to Travelers from Kaiser Engineers, Oakland, Calif., where he was a project engineer on industrial air pollution problems. For four years John was director of technical services for the Bay Area Air Pollution Control District, San Francisco.

In addition to the clippings we have word from **Peter L. Quattrochi**, XV, 90 Chimney Drive, Warwick, R.I., via the Alumni Fund envelope form that he is now manager, management services division, Spencer Claire Associates (Management Consulting), Warwick, R.I.

Here's news (or information) which I should have furnished to Paul Heilman a long time ago: **Robert A. Veitch**, XVI, 10 Howard Drive, Huntington, L.I., N.Y., married Pearl Schedra in June 1963. Pearl was a librarian at Grumman Aircraft Engineering Corporation, Bethpage, N.Y., where Bob has worked as a structural design engineer since his graduation from Tech in September 1946. Although Bob was in the bachelor ranks longer than most of us, he acquired not only a bride, but a daughter, Joann, who was then 15 years old. I roomed with Bob and with **Richard J. Kulda**, XVI, at Senior House in 1946 after all of us were released from active duty in the Army Air Forces. We not only roomed together but in our affluence bought a used Piper Cub with enough resulting adventures both before and after graduation to fill several columns in this magazine. Since graduation I have been privileged to spend many pleasant hours with Bob and his parents, while they were alive, both in Larchmont, N.Y., and in Huntington after they moved to Long Island. I talked with Bob on the telephone a few days ago and attempted to learn of new developments. Bob would only say that he is looking forward to the longer annual vacation (four weeks) which goes to those who have 20 years of service with Grumman. Maybe he plans to go back to Nassau where he spent his honeymoon.

In addition to the above, I have a letter of last summer from Class President **John Hull** to Paul Heilman in which John writes: "Our Hull Corporation continues to grow, and I find that you know less and less about your own business, the bigger it gets. More and more of the employees including the sweet young secretaries call you 'mister.' When you take a day off, you return to find things going along smoothly—which makes you wonder just how important you really are. We're exhibiting in a trade show in Switzerland in September (1965) so I'll be seeing the continent and England again for the first time since Betty and I lived there in 1948-50." John concludes, "It should be fun." Now that John and presumably Betty have travelled to Europe and back we might ask: Did the trip meet expectations? Did John and Betty find that Europe has changed in the last 15 years? What advice do they have for those of us who may be planning to go there? Read this column in the next issue for the answers to these questions and

many others. If we are fortunate we shall cover not only Europe but also South America through the eyes of our secretary emeritus, Paul Heilman. For the issues after that, let us have news of others. Paul Heilman was able to gather news even though most of us were quite apathetic about writing. Paul travels a considerable amount in connection with his job. I have not travelled at all on my job in the last three years. The situation may change but I want to propose another means of communication. I am completely sympathetic with those of you who just do not get around to writing news of yourself or your classmates. However, as an old telephone user and as a longtime stockholder in AT&T may I suggest an increased use of that medium for staying in touch? The night rates for long distance are much lower than they were a few years ago and with a little advance planning one can take full advantage of them. For instance, a station-to-station collect call gives the called station the option of rejecting the call at that time. If you would rather talk than write, send me a postcard authorizing a collect call and suggest when I should make it. From the time you receive this January issue, there will be only five to seven days for you to communicate with me for the March issue. Send me on a postcard one line of news about yourself or a classmate or utilize the above suggestion and write on the card, "You may call me station-to-station collect. I propose Sunday morning, January 9, between 8 and 10 a.m., PST, (my time) which is 11 a.m. to 1 p.m., EST (your time)," or I plan to write. If you don't hear from me by January 25, feel free to call collect, etc."

I hope you have all had a very Merry Christmas and that the New Year will be filled with those events which you will want to share with the readership of this column. After talking with Paul Heilman and President Hull, this time I'll sign—**Paul M. Robinson, Jr.**, Secretary, 7710 Jansen Drive, Springfield, Va., 22150.

'45

A most belated happy and prosperous New Year to you all! The brief notes of December were in reality items omitted the previous month due to lack of space. Once I learned of this situation I took the month off!

Bill Meade, your treasurer, has submitted his report; yes, we are solvent—to the tune of \$710.74 now safely resting in the Union Savings Bank of Boston. You might be interested in our financial position, or should I say earnings statement? Receipts for the 20th Reunion Year were: 81 Class dues at \$5.00, 8 Class dues at \$10.00, 42 Reunion Registrations at \$15.00 plus income from surplus favors at \$84.00; Total \$1,199.00. Expenditures follow: Mailings—\$198.44, Wychmere Harbor Club for punch, beer, cocktail party, etc.—\$413.00, Boston meetings—\$26.85, Reunion favors—\$307.65, banquet prizes—\$12.00, bank charges—\$7.66; Total \$965.60. The Reunion year balance of \$233.40 was added

to our Class Savings Account established by, I believe, Bill McKay back in 1955.

Now to our fabulous 20th. Some six months later it is difficult to reconstruct all your Reunion's details. In a single sentence, it was a success; further we were blessed with ideal weather for the first time ever! In a fine show of old age or senility, Thursday's early arrivals such as Jerry and Lib Patterson, Bud and Norma Hetrick, Clint and Fran Springer, Julian and Lois Busby, and Max and Trudy Ruehrmund politely, but adroitly, avoided one another in order that they might enjoy a good night's sleep. No such an event would have occurred 5, 10, or 15 years ago.

Friday morning, June 11, brought forth many early arrivals such as Reunion Chairman Bob and Anne Maglathlin; Bill and Betty McKay; Doug and Mildred Esten; Ed, Elinor, Suzanne, Edward, and Elizabeth Stoltz; Dave and Mary Trageser; Vince Butler; Chris and Jean Bolland; as well as Chuck and Janet Patterson. These so-called early birds helped us Thursday arrivals christen the ocean, the pool, the local golf courses, and, if I need so indicate, the bar! Although proud of their heritage those assembled did not overdo the latter since the day was far too pleasant to sleep away.

As we continued to frolic in many many ways the guest registrar swelled with the arrival of Wally and Louise O'Connell; Jim and Carolyn Pickel, Bill and Elaine Shuman, Al and Billie Bowen, Charlie and Nancy Hart, Al and Jeb Werner, Tom and Louise McNamara, George and Janice McKewen, Bob and Carol Welch, and Tom and Ellen Bell, all of whom arrived well prior to Hospitality Chairman Bill McKay's Happy Hour scheduled for 5:00 P.M.

As the Happy Hour became the Gay Hour (and, believe us, it is great fun to sit around a pool with a martini in a wet bathing suit at 7:00 P.M.!) we were joined by Hart and Blanche Kircher, Treasurer Bill Meade, Bert and Blanche Bossler; Jack and Verner Atwood, and Rosemary Mumford.

Friday night's steak and lobster dinner lived up to all advanced billings; yes, the food is as good as ever! The usual table hopping took place during dinner and the evening that followed. During the evening we were joined by Pete Hickey (Lou stayed at home to ship Lisa off to Cape Hagen Marine Lab); Jerry and Mary Quinnan; Tom and Betsy Hewson; Bob and Nina Wilson; Jake and Kate Freiburger with family; Bob and Kathleen Lohman; and, about 1:00 A.M. Jim and Ellen Brayton. Everyone enjoyed seeing the "official" films of our 15th Reunion at Wychmere, then Snow Inn; we especially enjoyed the differences in both people and the "plant" at Harwichport. Although activities slowed down about 1:00 o'clock, I will not say that they ceased; they were, however, subdued as compared to 5 and 10 years ago.

Saturday brought forth as beautiful a day as one can imagine; many golfers left early as no one wanted to miss the clam-bake at noon. During the morning the following stragglers arrived; Frank and Alice Donahue, Al Oxenham, Jeff Jeffries, Dick

and Bobbie Luce, Harry and Lib Eisenhardt, Warren Miller, and Sherry and Julia Ing and family from Hawaii. The first of two kegs was tapped at noon, followed by a most enjoyable and filling clambake with all dressed as they were; i.e. in either a bathing suit or golf attire. The beer continued to flow as chit chat, the beach, pool and ocean drew attention periodically. A most delightful day in radiant Cape Cod sun.

Following our class meeting the wives joined us for another fine gourmet's delight—hors d'oeuvres à la Wychmere—shrimp, oysters Rockefeller, little necks on the half shell to name a few items, washed down, if you will, by the beverage of your choice. This repast was, in turn, followed by our class banquet which we shall cover in detail next month.

Sam Moore of the Coast Guard is back in New York after a tour in Europe. Sam is assisting in the relocation of USCG headquarters to Governors Island now that the Army has vacated after some 200 years occupancy. . . . A recent New York Times article indicated that **Hal Thorkilssen** had been elected President of American Safety Razor Company, which extends his new responsibilities outlined last month. . . . **Russ Hamon**, project leader of the Northwest Hydrology Research Water Shed, U.S. Department of Agriculture, spent the fall in Europe visiting various experimental water sheds and scientific research projects. That's all for now; how about some news items!—**Clinton H. Springer**, Secretary, Fireman's Mutual Insurance Company, 420 Lexington Ave., New York, N.Y. 10017

'46

Ted Henning informs us that the postcard survey last spring showed that most of our class preferred to have our 20th reunion in the vicinity of the Cape and so arrangements have been made to hold it on the very tip—at the Provincetown Inn—over the weekend of June 10 through 12, 1966. It will be accessible by road, sea (already one group is planning to sail there) and via the Boston-Provincetown Airlines. The group working on the reunion so far includes Ray Brown, Jim Corbett, Ken Davis, Jr., Bob Fried, Ralph Krenkel, C.S. Lyon (our noteworthy President, who investigated for the committee on the Cape), Bob Striker, Jack Taylor and Ted. Here's a thought for the 29 class members who expressed interest in Jack Taylor's promotion of Bermuda. An informal trip there together could be planned between this reunion and our next one. Let's see what we can work out this June when we are together.* Anyone having questions or suggestions concerning the reunion can address them to Ted at 32 Woodedge Road, Manhasset, L.I., N.Y.

Stuart Edgerly, Jr., recently completed the 13-week Advanced Management Program of the Harvard University Graduate School of Business Administration. . . .

James O'Keeffe, who gave up metallurgical engineering work 12 years ago to become a New York investment counselor, has just authored his second book, "Bulls,

Bears, Pigs and Victims." It is an analysis of why and how investors fail to reach their objectives, and cites specific pitfalls against which all investors, new or experienced, should be on guard. His first book was "Estate Planning Primer," and both have been published by Investors Information Service. . . . **Dr. Abjil Abdullah**, President Emeritus of the University of Baghdad, Iraq, joined the staff of the National Center for Atmospheric Research, Boulder, Colo., as a scientific visitor. Dr. Abdullah is a dynamical meteorologist who has concentrated on theoretical studies of atmospheric wave motions and the structure of vortices such as those in tornadoes and hurricanes. He received his Sc.D. in meteorology in 1946, was visiting research professor at New York University in 1952-55, is the author or translator of five books published in Iraq, and was the founder and editor of Iraq's only scientific journal, The Proceedings of the Iraqi Scientific Society. . . . **Stephen H. Crandall**, Professor of Mechanical Engineering at M.I.T., presented his paper "Fatigue Failure Under Complex Stress Histories" at the ASME Metals and Production Engineering Conference last June.

Ernest R. Kretzmer, of 13 Blue Hills Drive, Holmdel, N.J., was recently promoted to head, High Speed Data and Error Control Department, at Bell Telephone Labs, Holmdel. In his new post he will be responsible for devising techniques for fast and accurate transmission of data signals over telephone lines, and for the development of special data sets. Since joining the Bell System in 1949, Dr. Kretzmer has been engaged in fundamental research on television transmission, design of transistor circuits, and exploration of coding techniques for efficient facsimile transmission. . . . **Robert J. Nolan** has been named Vice-president of International Terminal Operating Company, Inc., a subsidiary of the Ogden Corporation and one of the world's leading stevedoring and materials handling firms. Bob will be responsible for all contract matters, sales activities and outport operations. He joined ITO in 1949 as an assistant pier superintendent and has served as sales manager since 1958. He is also secretary of the company. After attending M.I.T. Bob received his B.S. degrees from the U.S. Merchant Marine Academy and the Georgetown School of Foreign Service. He received an L.L.B. degree in 1957 from Seton Hall Law School and was admitted to practice as an attorney in New York State in 1958. He lives in South Orange, N.J., with his wife and three children, is a member of the Lawyer's Club, Downtown Athletic Club, Maritime Association, Essex County Country Club, American Asiatic Association and the Rudder Club. Happy New Year to all.—**John A. Maynard**, Secretary, 25 Pheasant Lane, North Oaks, St. Paul, Minn. 55110.

'48

I was one of the class secretaries who was not deluged by your letters, which we requested in the June issue. Perhaps the

pony express has been delayed again. Or do some of you think you have nothing of interest unless you have been recently elected to another board? If what you are doing seems interesting to you, it will interest others; if it doesn't seem interesting you then tell why you are doing it. That should prove interesting. . . . **Robert J. Hansen**, Professor of Structural Engineering, was appointed a judge in the 37th annual Prize Bridge Competition sponsored by the American Steel Institute. He was apparently outnumbered by non-technical people on the panel, because most of the comments on the winning bridges seem to relate to aesthetics (e.g., "It looks like a bridge," "the steel and concrete look exactly like what they are") rather than to engineering qualities. . . . **Robert G. Loewy**, Assistant Professor of Mechanical and Aerospace Sciences at the University of Rochester, has been named Chief Scientist of the United States Air Force. He will be responsible for providing technical and scientific advice to the Chief of Staff of the Air Force on plans, programs, and requirements. Professor Loewy has been an active consultant to government and industry, including the U.S. Army Transportation Research Command and the Institute for Defense Analysis. He is an associate fellow of the American Institute of Astronautics and served on the Structural Dynamics Research Advisory Committee to NASA from 1958 to 1960. He was technical director and journal editor of the American Helicopter Society from 1963 to 1965, and in 1958 he received the Lawrence Sperry Award of the American Institute of Astronautics. Before he joined the Rochester faculty in 1962, Professor Loewy was chief technical engineer at the Vertol Division, Boeing Company. . . . To correct an omission in our notes in the November issue: Mr. **Robert D. Fier** is associated with Kenyon and Kenyon at 165 Broadway, New York, N.Y. 10006. . . . Col. (Ret.) **Pierre Kieffer, Jr.**, is president of the Vermont Agricultural and Technological Institute at Randolph, Vt. . . . **Frederick G. Shuman** is the director of the National Meteorological Center of the United States Weather Bureau. The center provides analyses of current weather conditions over the Northern Hemisphere and furnishes maps and charts depicting the current and future state of the atmosphere for general, national, and international uses. In 1957, Dr. Shuman received the Department of Commerce Silver Medal "for outstanding contributions in the development of numerical weather prediction techniques." . . . **Albert J. Kelly**, Deputy Director of NASA, recently spoke at the Temple Emeth Brotherhood in Brookline, Mass. His topic, "The Future in Space—What are we doing up there?" . . . **William J. Weisz**, 8710 Hamlin Ave., Evanston, Ill., has been promoted by Motorola, Inc., to general manager of its Communications Division. He is also a vice-president of the firm. The communications division produces mobile and portable two-way radio systems and other products for industrial, commercial and governmental use. . . . **Malcom W. P. Strandberg** was chairman of the technical program committee of the recent Millime-

ter Wave Conference, at Estes Park, Colo. . . . I had an unexpected and very pleasant visit with **Harold B. Nelson** here in Phoenix last spring. He, Janet, and the four children live in Sudbury and are apparently addicted to the Boston environs. H.B. and I were once co-owners of a vehicle which had been retired by the Boston Public Works Department, but which retained the city markings. Parking in the metropolitan area was simply not a problem. . . . Later in the year, during a trip to the wilds of Long Island, I contacted **Al Davidson** and found that he is now with Grumman and is doing structure and stress research. Al, Rheba and the little Davidsons are at 528 Rose Blvd., Baldwin, L.I.—**Richard V. Baum**, Assistant Secretary, 1718 E. Rancho Dr., Phoenix, Ariz.; **John T. Reid**, Assistant Secretary, 80 Renshaw Ave., East Orange, N. J.; **Roert R. Mott**, Secretary, Kent School, Kent, Conn.

'49

Here, probably belatedly, is the first installment of this year's notes on the illustrious members of the Class of 1949. Notes for the November issue didn't get written because yours faithfully was laid up. Dr. **Alex McDonald** writes "I am now with the Lockheed Research Laboratories in Palo Alto, Calif. Have left Dalhousie University in Halifax where I was head of the Applied Math Department." . . . The September issue of *Datamation* contains a feature article by **Justin Perlman** on "Centralization vs. Decentralization." Justin is managing partner of Innovation/Development, a consulting firm, and president of Lamellar Corporation. . . . **Bob Darden** has been devoting himself to the manufacture of furniture in North Carolina for lo these many years. According to Bob, as reported in the *Boston Globe*, a revolution in furniture-making is just around the corner unless somebody invents a way to make trees grow faster. His company, Heritage Furniture, makes its pieces the hard way by carving and laborious hand-finishing by craftsmen. But constant experimentation is carried on to bring the consumer fine furniture using new techniques such as molding under high heat and pressure. With a 50 percent increase in young married buyers by 1970, radical changes in furniture manufacturing methods and materials will be necessary, according to Bob. . . . **Neil Morrison**, with whom we worked so pleasantly on the 15th Reunion Committee, should be solidly settled by now in his new home and job in Scotland where he will be division manager of a computer production facility. Neil works for the Minneapolis Honeywell Corporation and, in Scotland, will be responsible for the production of Honeywell's Series 200 computers and associated equipment for United Kingdom domestic and export customers. . . . **Paul Weamer** recently moved into Needham and we were over to visit him in his new house. The avowed purpose of the evening was to play bridge. But Paul is the sales manager for Masslite,

Inc., here in Massachusetts and we talked nothing but shop till midnight at which time it seemed fitting that we should go home. I find other people's businesses fascinating and Paul's was no exception. He takes chips of rock and roasts them. Somewhere along the line he does something that makes the chips expand, become porous, and light. They then are used instead of gravel in making concrete. The resultant lightweight concrete is used in skyscrapers where ordinary concrete would not be feasible due to its weight and the resultant need for more massive and expensive building foundations. It turns out that skyscrapers cost less this way. Incidentally, Paul is vice-president this year of the M.I.T. Club of Boston.—**Fletcher Eaton**, Secretary, 42 Perry Drive, Needham, Mass. 02192

'50

Happy New Year Class of 1950! As the new year arrives we all have a tendency to reminisce . . . but this year being our 15th anniversary, we might be even more inclined to do so. In my own case I am particularly reflective over the wonderful time I had at the class's 15th reunion at Cape Cod. I only wish we would all make a New Year's pledge to be at the 20th reunion. And it certainly wouldn't be too soon to do it as we all must admit that the years are passing faster and faster!

Let's go back a few moments to June 1965 and observe that the following also participated in Alumni Day: Mr. and Mrs. Tom Cerwonka, Jerry Fisch, Mr. and Mrs. Tom Godfrey, Karl Katz, Mr. and Mrs. Lou Mager, Ralph Robins, Mr. and Mrs. Mario Romaguera, Nat Roossin, Mr. and Mrs. Roy Roth, Bob Terry, Jack Weaver, Mike Wall and Mr. and Mrs. Bob Mann.

Incidentally, you will be pleased to note that Bob recently co-authored an article with Steven Coons, entitled, "Computer-Aided Design," published in the McGraw-Hill Yearbook of Science and Technology. Bob has been working in this field for some time and I am pleased to read his excellent paper.

In my days with the American Management Association, I was heavily involved in the use of the computer for decision making purposes, rather than as a clerical automation tool. As a result, I developed a new concept called Management Information Systems (M.I.S.) and proceeded to popularize the idea as a foundation for computer-based management in every function of the business enterprise. Using AMA's resources, I was able to get widespread acceptance for the concept at a time when everybody was looking at the computer as the comptroller's new high-speed machine for faster accounting type work in payrolls, accounts receivable, etc. I co-authored a book on this subject, published by McGraw-Hill, and known as "Unified Operations Management." It introduces the concept of MIS and of the organizational function of the Vice-president of Administration for implementation of a Management Information Systems program.

Getting back to June of 1965, we find the following: That the able co-chairman of the reunion, **Stan Chaikind**, has accepted an important position with Price, Waterhouse in their Management Services division. Stan has been active in all phases of management consulting since 1950 and has been particularly well-known for his work in the marketing field.

Some of the statistics that came out of the reunion group are: Oldest bachelor—**Ed Kruse**; greatest number of children—**Bob Wohler** with 10; longest married—**Jack Downhill** since 1946; longest distance travelled to reunion—**J. D. Mills** from England; oldest classmate—**Serge Wisotsky** at a "young" 45 years; highest golf scorer—**Don Young**; loudest square dancer—**Bob Uhl**; and longest to "graduate" from college—**Bob Mann** now going into his 20th year at M.I.T. Finally, we all averaged 3-1/3 children. Let's see what we can do for 1966 to improve our performance further. . . . Happy New Year to each of you.—**G. N. Stilian**, Secretary, 4 Biscayne Drive, Huntington, N.Y.

'51

A number of our classmates' names have been prominent in the news during the past year, and in case you might have missed them we will mention just a few. **Breene Kerr** joined NASA last spring as an assistant administrator for technology utilization, and in an interview with the *Christian Science Monitor* outlined a number of ways in which the new space technology is being utilized by industry. The members of the Freshmen Crew Team received a very delightful letter from Breene concerning the problems in moving to Washington, D.C. . . . Also last spring, **Carroll White** was named Vice-President of W. R. Grace & Company's Overseas Chemical Division. Carroll joined the Dewey and Almy Chemical Division in 1952 as a sales engineer, and in his present capacity he is responsible for coordinating the marketing of the wide range of chemicals sold by Grace overseas. . . . **Thomas Hoffman** joined the Smithsonian Astrophysical Observatory slightly over a year ago in order, as the *SAO News* states, ". . . to provide design and engineering services for astronomers and physicists." He and his wife and daughter live in a 250-year-old house in Marblehead, and he is enjoying skiing as well as sailing. . . . **Richard Aroner** joined the Boston firm of J. E. Bowker Associates, Inc. as a vice-president, and is presently residing in Cohasset. . . . **Dale Cooper** joined the management of the Tidewater Oil Company as science manager, and is residing in Los Angeles with his wife and four children. Professor **Mert Flemings** has made another contribution to foundry technology with a paper on "Mechanical Properties of Unidirectional Steel Castings," and **Melvin Labitt** was an author of a paper on flow phenomena in space. . . . Dr. **Werner Glass** is now Deputy Director, Research, of Ionics Corporation, having joined that firm in 1963. . . . Dr. **George Shumway** completed research on the fa-

mous Conestoga Wagon and published a book on this subject last year. . . . **Stanford Olsen** is district manager of the Dorr-Oliver, Inc., in Chicago, and participated in a round-table discussion on water pollution. . . . **Robert Butters** is now manager of Advanced Product Development for Industrial Nucleonics Corporation and reports a fifth addition to his family "in what is turning out to be a long line of children." . . . Last June **Albert Cohen** was elected President of Electronic Space Structures Corporation, and Al and Anna have three daughters—Lynn, Melissa and Bambi. . . . **Donald K. Crockett** is working on flight control systems for Vought Aeronautics in Dallas, Texas. . . . **George Haskew** reports that he is presently assistant to the president of the Hackensack Water Company in Weekauken, N.J. **Earl Kleitsky** is currently an assistant professor and Assistant Director of the Sensory Communications Laboratory at Syracuse University, having received his Ph.D from S.U. in 1961. . . . **John Pasleka** is now working for Polaroid Corporation in the product engineering group, and has two children—John and Susan. . . . **Leonard Hoffman** received an M.S. in civil engineering from the University of Wisconsin in 1963 and is living in Milwaukee. . . . **Salvatore Santo** is employed by the Ralph M. Parsons Company in Los Angeles, and is living in La Crescenta with his wife Una and daughter Susan. . . . **Rachel (Goetchius) Seller** reports that she has a very busy Architectural Drafting Service to sandwich in between family, home and church activities. . . . **Ellie and Howie Livingston** spent a well-earned vacation in Puerto Rico and the Virgin Islands, and we hope that everyone has had a pleasant holiday. . . . We would appreciate a note about the activities of our classmates and remind you that this is the year of our fifteenth reunion.—**Howard Livingston**, Secretary-Treasurer, 358 Emerson Road, Lexington, Mass.; **Forest Monkman**, Assistant Secretary-Treasurer, 6331 Beverly Drive, Mission, Kansas.

'54

It is with regret that I must report the death of one of our classmates, **Anthony Ranti**, XV, who had made his home in Pittsfield, Mass. Anthony died September 12 in Baffin Bay near where he was employed by RCA. The mishap apparently occurred while he was traveling in the bay in his kayak.

Peter J. Andrellos has recently been named Laboratory director of the General Clinical Research Center for Children at the Children's Hospital Medical Center. Peter has his Ph.D. in chemistry from Harvard. . . . **Edward M. Hofstetter**, VI-A, who is with Lincoln Laboratory, had an article in the July issue of IEEE Transactions on Information Theory. . . . **William B. Kehl**, XVIII, wrote about "Computers and Literature" in the August issue of Data Processing Magazine. He is currently Director of the Computing Center and Professor of Computer Science at the University of Pittsburgh.

Did you realize that when your child gets tired of looking up items in the Golden Book Encyclopedia, all can be solved by obtaining him time-sharing with Systems Development Corporation, which has the book on magnetic tape?

Donald J. Marshall, XII-B, is head of research and development for Nuclide Corporation in Medford. He had been at the firm's State College, Pa., plant. He and his wife and son will live in Winchester. . . . While we report the gain of one classmate to the Boston area, we must also report a loss. **Anthony R. Romano**, XVII-old, has moved to Springfield where he has become the general manager of SCBD (Springfield Central Business District). This is a complex of 250,000 square feet of ground space, office space, and specialty retail space each, plus a 200 to 250-room hotel. . . . Another author is **Richard D. Tooley**, VIII, whose article was in Geophysics for August. Dick now works for Northrop Space Laboratories in Hawthorne, Calif.

In news from the graduate student members of our class, **George Phillips**, XV, Vice-president and general manager of Corplan Associates (a management consulting firm), has been picked as one of the 10 outstanding young men in Chicago by the Junior Chamber of Commerce.

Egons Tons, I, an instructor in Civil Engineering at Purdue had an article in Adhesive Age. . . . Next spring **James Wei**, X, will be \$5000 richer when he receives the American Chemical Society Award in Petroleum Chemistry at the 151st national meeting. The award recognizes his success in the application of mathematics and physics to chemical engineering. Though currently a visiting professor at a well known engineering school in California, his more permanent association is a senior research associate of the Socony Mobile Company.

As you pack away the decorations from the Christmas season, remember to pack up the cards with notes from classmates and send them to a worthy cause, your Secretary.—**Bob Evans**, 43 High Street, South Acton, Mass. 01771.

'57

Don Park sent me the following letter in August: "I have been at the Painted Post, N.Y., plant of Ingersoll-Rand since graduation with the exception of a two-year stint at M.I.T. to get my master's in Industrial Management. My present assignment is in the data processing systems group, working primarily in the area of repair parts order processing. My only professional society activity is in the Elmira area chapter of the American Production and Inventory Control Society. I will be secretary of the chapter for 1965-66. My primary community activity is the Corning Philharmonic Society, a community orchestra and choral society. I have played in the orchestra since 1956 and am now serving my second three-year term on the board of directors. I will be secretary of the board during 1965-66. Quite frankly I have not heard

much from other classmates. I get a note from **Bob Currie** now and then. He is with Air Products and Chemicals in Allentown. Last night I had dinner with **Bill Leitch** (class of 1956, I believe) who is on the editorial staff of Business Week. He tells me **Bill Brasuell** is now with Lockheed in Sunnyvale, Calif." . . . Two postcards arrived recently. The first was from **Frederick (Kim?) Seward**: "After three glorious years in Hawaii, I have just returned to take over as manager of Air Traffic Control Programming at IBM. The location of the project is Atlantic City which is ridiculous after the sublimity of Honolulu, but it is a fascinating job." . . . **John McAllister's** card read as follows: "Last spring I went with a project to Europe and especially to Germany for nine weeks, returning only one week before our first child, a girl, was born. She will be an addition to our slowly growing antique collection! I am still with Sanders Associates producing 'military electronics' with an occasional flier into space electronics. We enjoy New Hampshire hills and history and the little town of Hollis where we live." . . . Finally, a brief note from **Hank Salzhauser**: "We were blessed with another child in July. That brings us up to the point of having an all American family with a boy and a girl. We have recently moved from the city; our new address is Hilldale Lane, Sands Point, Long Island. Both Sue and I look forward to any visitors. Coincidentally, **Jules Byron** has become a commuter on the same line of the Long Island Railroad. Besides seeing him occasionally, it is a pleasure to crash into him with my supermarket shopping cart!" . . . There will be more news next month, I earnestly hope.—**Frederick L. Morefield**, Secretary, 457 Harris Road, Bedford Hills, N.Y. 10057.

'58

Our western news sleuth, **Toni Schuman** reports, "**Wes Wills** has just returned from Nigeria where he spent a tour with the Peace Corps. After coming home through Paris, he is teaching school in Riverside, Calif. . . . **Daryl Wyckoff** now has a second daughter, Abigail, born in February. Daryl is the manager of lease equipment for Cosmodyne and heads the division known as 'Cryogenics for Rent' (the Hertz of the cryogenic industry). And at night he is working towards his MBA at U.S.C. . . . **Ed Bell** has been named assistant treasurer of the M.I.T. club of Southern California and is living in Pasadena. And I am now on the board of governors of the M.I.T. club here, representing the classes '55 thru '59."

Also active with M.I.T. clubs is **Charles Diebold**, who is now president of the Buffalo group. He is also serving a two-year term on the National Development Committee of the M.I.T. Corporation. He is vice-president of the Western Savings Bank. . . . **Peter Lenn** has earned his Ph.D and is now a senior research scientist for Electro-Optical Systems, a subsidiary of Xerox. Currently he is developing electric arc light sources for NASA.

... **Eugene Zuch** has returned to M.I.T. to work on an S.M. in Aeronautical. He was with the Instrumentation Lab and before that served a tour with the Signal Corps. . . . **Walter Braun** is now working for the Weather Bureau in Washington, D.C., as a physicist-programmer after leaving active military service.

A note from **Edwin Lee** brings us up to date. He is now manager of Electronic Development Group in the Aerospace Department of Consolidated Systems Corporation in Pomona, Calif. He and his wife Jo-Ellen now have two daughters, aged three and one, and have just bought a home in Claremont. . . . **Merle Persky** writes that he is newly married to the former Phyllis Charick, a Simmons graduate, and that they are living in Brookline—**Michael E. Brose**, Secretary, 205 Pine Street, Tecumseh, Mich.; **Antonia D. Schuman**, Western Associate, 22400 Napa St., Canoga Park, Calif.; **Kenneth J. Auer**, Midwestern Associate, 23105 Stoneybrook Drive, North Olmsted, Ohio.

'59

The news this month is of a congratulatory nature: Last November saw the marriage of Miss Deborah Pike of Kingsport, Tenn., to **John Christie**. They are setting up housekeeping within easy distance of New York City and Bell Laboratories in New Jersey; John has been with Bell since '64 when he received his doctorate in M.E. from Tech. Debby was looking for a job the last I heard; being a competent mathematician, she shouldn't have much trouble in that area of the country. . . . **John Leahy** has been appointed chief accountant of Norton Company's abrasive division. He has been with them since graduation, working first in the manufacturing control section of the refractories division, and then as a member of the controller's staff. John is presently serving as secretary of the M.I.T. Club of Central Massachusetts.

Combined apologies and congratulations go to **Dick Barnes**; I received a note from him several months ago and promptly misplaced it. The Fates were not to permit such carelessness, however, for I recently received a news clipping from the Alumni Association concerning his appointment; in filing the latter, I found his note. Dick finished his Ph.D. thesis at Iowa State last August, and is now "back in God's country" after being lost in the corn fields." He is Assistant Professor of Chemistry in a six-man department at Trinity College in Hartford. Dick concludes his note by apologizing for not timing his news for a more slack period of correspondence; never let that worry any of you, because, if I don't temporarily misplace the letter, it will take precedence over news clippings any day. Besides, I can always save the clippings for the "slack" periods.

Hearty congratulations also go to **Bob Broughton** who has been appointed Chairman of the Department of Agricultural Engineering at McGill University's

MacDonald College near Montreal. In his letter, Bob mentions interest in future reunions, and goes on to say, "These are challenging and exciting days in the development of North America and we enjoy the fresh spirit which is continually injected by the Technology Review." Aside from the compliment which is certainly appreciated, Bob's letter was of particular interest to me in that he is a member of a group which has been more or less neglected up to now in class activities and especially in this column. I have purposely withheld a multitude of news clippings on the group, the so-called GSO's (graduate students only), because I had figured—apparently mistakenly—that they probably did not read the Class Notes. I shall include news of them as well in the future, but I shall have to be somewhat selective in their news because it generally is far more voluminous than that concerning the '59 baccalaureates. If there are any comments about this policy, please let me know.—**Glenn W. Zeiders Jr.**, Secretary, 3 Rose Ave., Watertown, Mass. 02172; **Wayne Worrell**, Lawrence Radiation Laboratory, Berkeley, Calif. 94720.

'60

We have a letter from **Steve and Orleen Shimberg**: "Some news for the Class of '60 to share—Steve switched jobs in July. He now works for IBM and loves his new field of concentration. We purchased a house in Yorktown Heights and will move in on November 19. Jessica Kim was born to us on October 15! She is a healthy little girl, responding beautifully to her dad's guitar playing." . . . **Joe Verderber** is working as a research supervisor at Addressograph Multigraph in Cleveland. . . . **Tony Aldrich** has returned to the Boston area; he's now at the Harvard Business School working for an M.A. in business. . . . **Dr. (Captain) Robert Gold** just graduated from the U.S. Air Force School of Aerospace Medicine primary course at Brooks Air Force Base, Texas. After eight weeks of specialized study in aerospace medicine, Bob entered pilot training at Williams Air Force Base, Arizona, as a member of the Air Training Command which provides the flying, technical and specialized education programs for the Air Force. . . . **George Koo** is a group leader in charge of the Engineering Properties and Testing Laboratories of the Plastics Division of Allied Chemical Corporation; before joining Allied, George worked at Lincoln Laboratory, and then was a research engineer for Boeing, working on solid propellant technology for the Minuteman and later on materials and processes for the Saturn project. He has just had an article published in the Journal of the Society of Professional Engineers.

We are sorry to report the death of Major **Jay E. Currie, Jr.** in a plane crash on Cape Cod in October. . . . **John N. Maguire** has been appointed part-time Assistant Professor of Management at San Jose State College in California. . . .

Donald Washington is an Associate Professor of Environmental Engineering at R.P.I. He participated in a recent research symposium section of the annual conference of the Water Pollution Control Federation in Washington, D.C., in October. . . . **Robert Dirkman** has been named Assistant Professor of Electrical Engineering at Merrimack College in North Andover, Mass. He was previously a senior engineer at AVCO in Wilmington. . . . **Peter Tarjan** is studying for his doctorate at the University of Syracuse; he was married last December. . . . **James Massey** is an Assistant Professor of Electrical Engineering at Notre Dame; he is also a consultant for the Codex Corporation. . . . **Tip Noe** reports a new baby girl in the house—but doesn't say when. . . . **Richard Lowe** has worked in Honolulu for John Carl Warnecke and Associates, Architects and Planning Consultants, since the fall of 1964. He writes that surfing is his major sport. . . . A note to those who have been wondering if they missed some large numbers of their classmates while they were at the Institute—the alumni of the Class of 1960 includes all the people who received degrees in 1960, bachelors, masters and doctorates. . . . **Tom Farquhar** is still hocking those Class of 1960 playing cards (\$1.25 per deck, send money to T. H. Farquhar, 52 Mayo Road, Wellesley, Mass.) Now that Christmas is over and you didn't get any, why not buy some for yourself? Also, why not drop me a line—the rest of the class would like to know what you're doing. Or if you're the lazy type and are in the Boston area, call the information in.—**Linda G. Sprague**, 345 Brookline St., Cambridge, Mass.

'61

Here continue selected excerpts from the June cocktail party cards: **Leo Cannon** wrote that he has been working as a public accountant for the firm of Lybrand Ross Bros. and Montgomery, an organization that audits the books of none other than M.I.T. Last September Leo married a Techretary from Course X, **Judy C. O'Neal**. . . . **Fred Carson** got his Ph.D. from the University of Chicago last summer. He wrote that he was "going to do post-doctoral work under Kurt Mislow at Princeton for awhile." . . . **Bill Lenoir** got his Ph.D. out of the E.E. department at the Institute, but they still wouldn't let him go, and he is now an Assistant Professor and Post Doctoral Fellow in course VI. **Liz and Bill** have a son named William B., Jr. . . . **Paul Jaffe** already has a master's degree from Case Institute in his pocket and he is proceeding to a doctorate in metallurgy. . . . **John Savage** continues the advanced degree parade. His doctorate is from M.I.T. in Electrical Engineering, and he is taking it to Holmdel, N.J., and the Bell Labs. . . . **Sam Williams** also stayed on to get a Ph.D. (his in Physics) and found it impossible to break away. He is still at M.I.T. in the

National Magnet Lab, working in solid state at very high H (or is it B?).

It's going to be interesting to get a letter from **Roger Stover** (hint). He has been on a one-year teaching mission at Gordon College, Rawalpindi, West Pakistan. He was expected to return last August. The teaching was under the category of missionary work and thus was without salary.

Pete Maas received a master's in Computer Science at Stanford in June '64. Two months later he married Margot Jena in Rio, on August 10, 1964. This was followed by a short stay at the Lockheed Missile and Space Company. Then in January '65 Pete returned to the academic grind and headed for Boulder and the University of Colorado where he is busily engaged in matters relating to a Ph.D in Physics.

You'll never guess what **Victor Chung** is doing! He, it seems, like everyone else in the class, is working for a Ph.D. Victor is in the physics department at Berkeley and is hoping to get his thesis done in time to graduate this June. Vic has also left the rapidly diminishing group of bachelors in the class. He was trapped by Ida Cheung of Hong Kong in September 1964. . . . One of the few members of our class making an honest living is **Jack Jones**. He is working for Proctor and Gamble at their International Division in Cincinnati. He also has left bachelorhood. The culprit this time was Lyn McDonald, and the date was December 1964. . . . **Ed Tucker** spent two years in the Army and has now returned to his job at the Hercules Powder Company in Parlin, N.J. An addition to his family, William David, arrived last February.

Well, it's now the sad moment in every class secretary's life when he is reduced to culling information from press clippings. The best way for you to prevent this catastrophe from recurring is to send material direct. First a few notes from the society pages. The Whiting (Indiana) Times-Graphic announced the marriage of **Raymond Lewis** to the former Lois Weitkamp. The wedding was at the M.I.T. chapel last May. Lois is a secretary at the Fogg Museum at Harvard while Ray continues as a grad student at the Institute in "high energy physics." . . . The Boston Herald reports, under the headline "Cambridge Couple Dine at White House," that **Richard deNeufville** was chosen a White House Fellow. Dick is spending a year in Washington under this fellowship.

The news of several more graduations has been transmitted to us through this indirect manner. **Karen Pajari** got an M.D. last June from the University of Minnesota and was elected to the national medical honor society, Alpha Omega Alpha. She is interning for a year at the University of Kansas. . . . **Ellwood Curtis** received the first Ph.D. in mathematics ever given by Dartmouth last June. . . . **Richard Garvine** received his Ph.D. in aerospace and medical sciences from Princeton. . . . **Angelo Lamola** was handed a Ph.D. in chemistry by L. DuBridge (president of Caltech). . . . **Koo Sun Kim** got an M.S. in math from the Lowell Technological Institute; Wil-

liam Jeffers has not yet achieved the lofty goal but is well on his way at the University of Illinois. Bill holds an NSF graduate traineeship in electrical engineering. . . . **John Benjamin** remained at M.I.T. after graduation, got his M.S. in 1962 and his Ph.D. in 1965. Both degrees (as well as the original B.S.) were in metallurgy. John is now at the Paul D. Merica Research Laboratory of the International Nickel Company.

Finally, some of these '61ers are actually putting all this education to some use. For example **Robert Logan** has published. His paper on a "Possible Discrepancy Between the Regge-Pole Hypothesis and the Difference of the pi plus Proton and pi minus Proton Differential Cross Sections" was published in Physical Review Letters. I tried to read it and got lost somewhere between the Pomeranchuk Pole P, and Igi's second Pomeranchuk Pole P' (in the first paragraph of the paper). . . . The profile attached to a paper by **Shu-Kwan Chan** in the IEEE Transactions tells us that he has been working on partial differential equations with the hybrid computation group at M.I.T.'s Electronic Systems Lab. Shu-Kwan's work is in the area of speech synthesis by hybrid computers. Volume 26 of J. Phys. Chem. Solids contains an article co-authored by **Ralph Santoro** on the "Magnetic Structure of (CaMnSi)⁴." The work was done at M.I.T. in the E.E. department, where we shall assume he remains (until better information is forthcoming). —**Andrew Braun**, Acting Class Secretary, 1038 Beacon St., Brookline, Mass. 02146.

'62

Congratulations to **Bill and Margaret Bloebaum** on the birth of their son, William Douglas, III, on October 9. As I wrote last month, Bill has been transferred from San Francisco to Los Angeles and is living in Anaheim. . . . **Harold Waller** has completed his M.S. thesis at Northwestern University and will receive a degree next June in Mechanical Engineering and Astronautical Science. . . . **Ed Linde**, his wife Joyce, and their son Douglas, have moved from New York City to Boston, where Ed has joined Cabot, Cabot, and Forbes. He is a project manager in the commercial division of this large construction company and land developer. He is assisting the project manager of the Technology Square project, a joint venture office development with M.I.T. behind the campus. Next summer he expects to be the project manager at State Street Plaza, a 35-story office tower in the heart of Boston's financial district. . . . **Joseph Perkell** is back at Harvard Dental School after spending some time in Europe. . . . **Jan Hyde**, who worked in London last summer, is in his second year at Harvard Business School. . . . As for myself, I have just completed computerizing a critical path schedule for Oceanic Properties' 3000-acre new town development here on Oahu. The schedule includes over 600 activities and associated time estimates to be performed prior to model opening in

1967. . . . Looking forward to hearing from more of you.—**Jerry Katell**, Secretary, Oceanic Properties, P.O. Box 2780, Honolulu, Hawaii 96803

'64

The plea that went out for class contributions in February is evidently still not dead, for last month **Ralph Bestock** sent in a contribution. Ralph completed his M.S. degree in E.E. at Northwestern and is now working for Lockheed Missiles and Space Company in Sunnyvale, Calif. He expects to be married in the spring to Miss Donna Miller of Oakdale, Calif., and Mills College. . . . **Steve Dreier** received his S.M. from M.I.T. in Course XV and is now working for Westinghouse in Baltimore. . . . **Mike Hirsch** received his S.M. in E.E. and is working for the Mitre Corporation. He lives in Watertown. . . . **Bob Kimmel** gave a talk on "General Birefringence Studies of Solid Polymers" at the fall meeting of the Fiber Society in Wilmington, Del. The meeting was held October 7. . . . **Jerry Luebers**, our class VP, was named one of 14 Baker Scholars in his class of 671 at the Harvard Business School. The award goes to those in the top five percent of the class, with only those in the top 2½% being named in the fall. . . . **Tom C. Munnell**, who received his M.S. from M.I.T. in '64, was also named a Baker Scholar. . . . **Neil Orloff** is in his second year at the Harvard Business School. . . . **Mark Radwin** received his S.M. in E.E. this past June and is now in Course XV going for his second master's. . . . **Ron Randall**, now in his second year at the Harvard Business School, was also among those named a Baker Scholar. . . . **B. Rothman** is working on a Ph.D. in metallurgy at Northwestern. . . . **Fred Silverstein** will receive his MBA from Cornell business school in June. . . . **Bruce Stevens** is now working for the research department of Rohm & Haas Company of Philadelphia at the firm's plant in Bristol, Pa. He received his S.M. in Chem E this past June from M.I.T. . . . **Mike Stulbarg** is now in his second year at the Harvard Med School. . . . **Al Teich** was married in June to Carolyn Richmond of Brookline. She is a sociology student at B.U. and he is working on a Ph.D. in political science at M.I.T. on a National Institute of Health fellowship. They spent the summer in Washington, D.C., and are now living in Brighton. . . . **Arnold Weiss**, his wife, and two children are now living in Milwaukee, where he is an electrical engineer at the A.C. Spark Plug Company. He received his S.M. in aeronautics in '64. . . . **Jacques Willems** received his S.M. in E.E. in '64 and is now back home in Belgium in the Department of E.E. at the University of Ghent. . . . **Walt Winchall**, who I thank for much of the news in this issue, is now in his second year at the Harvard Law School. I would appreciate it if others who have news from our classmates sent the information on to me—**Ron Gilman**, Secretary, Dane Hall 102, Cambridge, Mass. 02138.

Club News



French Visitor to M.I.T. Reports to Paris Club

"Bridge to To-Morrow," the USIS film about M.I.T., was shown at the October meeting of the M.I.T. Club of Paris.

Added to that attraction was the presence of General Poirer, Directeur de l'Ecole du Genie Maritime de France, who had just been on a mission to the United States and had been most graciously received by M.I.T. authorities. His talk was gratifying to all the graduates present, and particularly significant since there is to be a new groupment of French technical and advanced technical institutions of learning some miles off Paris, in an entirely new complex of buildings. General Poirer is the chairman of the committee planning this development.

We are sorry to say that our Honorary President, Welles Bosworth, '89, has not been present at the last two reunions, and that Mrs. Bosworth told us that it may be difficult for him to come to Paris in the future. Even though he is not present, he continues to be an inspiration to all alumni, both French and American. —Frederic Celler, President.

Central Pennsylvania Group Holds Dinner Meeting

Twenty people attended a dinner meeting of the M.I.T. Club of Central Pennsylvania on October 23 at Slug's Roost in Camp Hill, with a complete smorgasbord dinner. Professor William H. Dennen, '42, of M.I.T. was scheduled to address our group, but was unable to make the meeting. In his place, Al Newton, one of our Club members and the director of research and development for the York Division of the Borg-Warner Corporation, spoke extemporaneously about the interesting subject of environmental control. We were pleased to have several newcomers join us for this meeting. —John A. Morefield, Jr., Secretary.

Professor Dennen Speaks in Northeastern Pennsylvania

The M.I.T. Club of Northeastern Pennsylvania held a dinner meeting October 25 at the Scranton-Wilkes-Barre Airport Restaurant. Wives were invited. Stanley S. Davies, president, arranged to have Professor William H. Dennen as the guest speaker and he delivered an interesting synopsis of the first day of the 1963 Alumni Seminar on the Origins of Matter.

The business session centered about guidance of students and the dissemination of useful information about M.I.T. to local high school guidance counselors. —Andrew W. Plonsky, '43, University of Scranton, Scranton, Pennsylvania 18510

Rochester Alumni to Go Skiing This Month

Club activities in Rochester this season started with the annual steak roast and election of officers. On November 20 the club enjoyed a tour of a new observatory in the Bristol Hills, operated by the University of Rochester. The 24-inch telescope here was being used to study the atmosphere surrounding eclipsing binary stars, and to gather information on galactic evolution.

The traditional Christmas luncheon was to be held on December 28. Area undergraduates on vacation from classes at M.I.T. were invited to speak on their impressions of life at Tech to applicants and prospective students. Plans for future meetings include a ski weekend in January and, in March, an Alumni Seminar in miniature.

Officers for 1965-66 are: President, James K. Littwitz, '42; President-elect, William A. Pitbladdo, '31; Vice-president, John D. O'Brien, '51; Treasurer, Reynold A. Grammer, '47; Chairman, Educational Council, Harry E. Essley, Jr., '36; Executive Committee Members, Robert G. Bowie, '38; Corwin H. Brumley, '44; and James S. Bruce, '39; Secretary, W. Blake Foster, '60; Assistant Secretary, L. David Sikes, '63. —W. Blake Foster, Secretary, 60 East Boulevard, Rochester, N.Y. 14610.

Dr. Dennen Addresses Lehigh Valley Club

"The Beginnings of Things" was the interesting subject of a talk delivered by Dr. William H. Dennen, '42, in Allentown, Pa., on October 28, 1965, to highlight the first meeting of the season. The speaker, an Associate Professor of Geology at the Institute, was introduced by our new president, following a dinner enjoyed by a representative group of alumni and their wives, including one alumna, Jane Mackenzie '46, whose husband Bill '45 is said new president. Club members were present from Allentown, Bethlehem, Fullerton, Kutztown, and Reading. During the Christmas vacation the club planned a get-together for all Lehigh Valley residents now enrolled as students at M.I.T.—Parker H. Starratt '30, Secretary, Box 182, RD 2, Bethlehem, Pa., 18017.

PRESIDENT and Mrs. Julius A. Stratton, '23, and Mr. and Mrs. D. P. Severance, '38, will attend the M.I.T. Fiesta in Mexico, March 10-12. For reservations, write to Armando Santacruz B., M.I.T. Club of Mexico, Reforma 116-804, Mexico 6, D. F., Mexico.

Washington M.I.T. Club Hears President Stratton

The M.I.T. Club of Washington was honored by the presence of Dr. and Mrs. Stratton at our first dinner meeting on October 14 at the Army-Navy Club. One of the largest turnouts in recent years, more than 150 members, wives and guests, heard Dr. Stratton discuss issues that bear upon M.I.T. today. Dr. Stratton described M.I.T. as an institution that was tending away from the fragmentation of the multiversity. The evolution of interdisciplinary centers, the effort to bring undergraduates into the mainstream of research activities, the overall technological orientation of the Institute, the relatively small size, were described as factors that produce a sense of coherency at M.I.T. Dr. Stratton also discussed the expanding numbers of disciplines at M.I.T., the increasing emphasis on advanced study, and the responsibilities of M.I.T. to the world at large. Dr. Stratton's talk was followed by a spirited question and answer period.

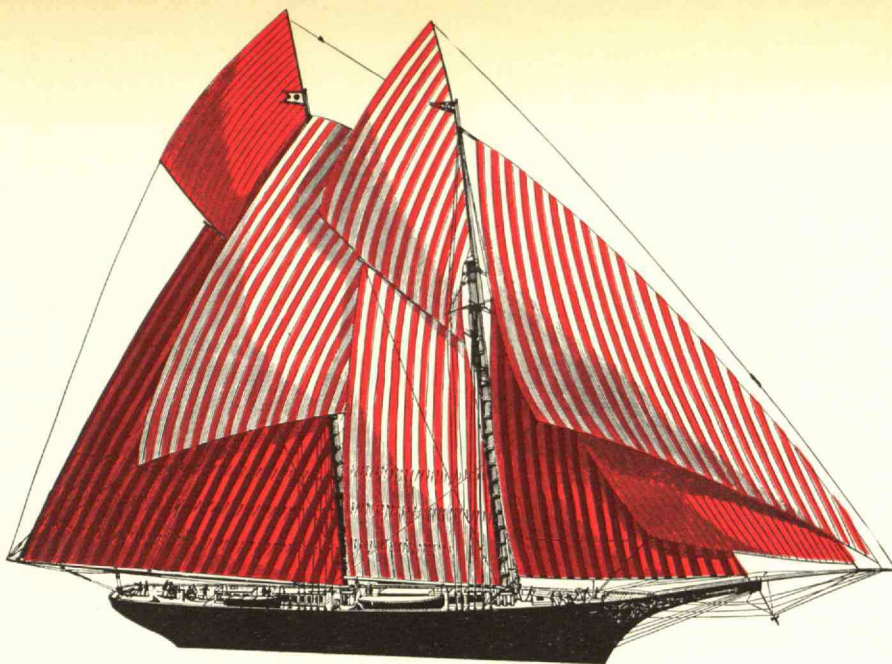
The speaker at the December 9 dinner meeting was to be Ernst Stuhlinger, Director of Research Projects, NASA, Marshall Space Flight Center, Huntsville. The January 28 dinner meeting will feature Mrs. Donald McArthur, Deputy Director, Peace Corps. On March 17, we will be honored to have dinner with the Vice-president, Hubert Humphrey.

Plans for the continuing education seminar series have advanced considerably. The first all-day seminar will take place on a Saturday in February. The major speaker will be Dr. Charles Townes, M.I.T. Provost and Nobel laureate. Many Washington M.I.T. club members have contributed of time and effort to make the seminar series a success. Larry Conant has been directing the planning with able assistance from Jack Phillips, Paul Robinson, Gil Lewis, Priscilla Thain, and Gen. Leslie Groves.

The downtown luncheon club met on November 2 in the executive dining room of the FAA. Sidney Metzger, Engineering Manager of the Comsat Corporation, discussed the development of the technology required for a communications satellite system. Future meetings will be held at the FAA on the first Tuesday of each month. —Dan R. McConnell, Technology Review correspondent, 4134A Suitland Road, Suitland, Md.

Rocky Mountain Alumni Ponder Environmental Studies

The first meeting of the fall season of the Rocky Mountain M.I.T. Club was held on November 10 at the Wellshire Country Club in Denver, and was attended by about 65 members, wives and guests. Among them were six new members with their wives. After some pleasant socializing and a good dinner, we enjoyed a presentation by Robert Knecht on the "Program of the New Institutes of Environmental Research." President Andy Pfeifferberger, '49, reviewed the club's program for the year and was reassured by the response from the membership. —J. A. Baring, '48, Secretary.



January Sale. At the Tech Coop.

Specially priced for the January Sale, prestige men's wear can now be purchased at substantial savings! Dunster labels, exclusive with the Coop, are preferred by alumni for their assurance of fine quality, expert styling, solid comfort. Choose from these January Sale items, and complete the order form now.



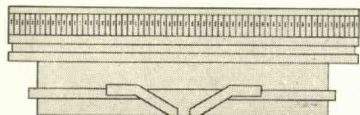
Dunster Shirts

The Dunster name is synonymous with distinctive shirtmaking. Fine cotton oxford cloth in blue, white or muted blue stripe is fashioned into

buttondown shirts designed for complete comfort and excellent fit. Regularly priced at \$4.20, Dunster shirts are available during the January Sale at 3/\$10.

Dunster Pajamas

Rarely are pajamas designed with such care and attention to detail. Tailored of fine quality broadcloth, these handsome pajamas are cut for comfort and feature piped edges. Blue, grey or tan in coat or middy styles. Sizes A-B-C-D usually \$4.95, now on sale at 2/\$7.95. Long sizes B-C-D usually \$5.50, now specially priced at 2/\$8.95.



THE TECH COOP

OF THE HARVARD COOPERATIVE SOCIETY
IN THE NEW M.I.T. STUDENT CENTER
84 Massachusetts Avenue
Cambridge, Massachusetts 02139
491-4230 (Area Code 617)

Parcel Post Handling Charges:
New England States: Free
Other States East of Mississippi: 35¢ per order
States West of Mississippi:
50¢ per order

Quantity	Item	Color	Size	Price
	Dunster Shirts			
	Dunster Pajamas Middy Coat			

Handling Charges _____

NAME _____ COOP NO. _____

ADDRESS _____

CITY _____ STATE _____ ZIP CODE _____

AMOUNT ENCLOSED _____ CHARGE _____

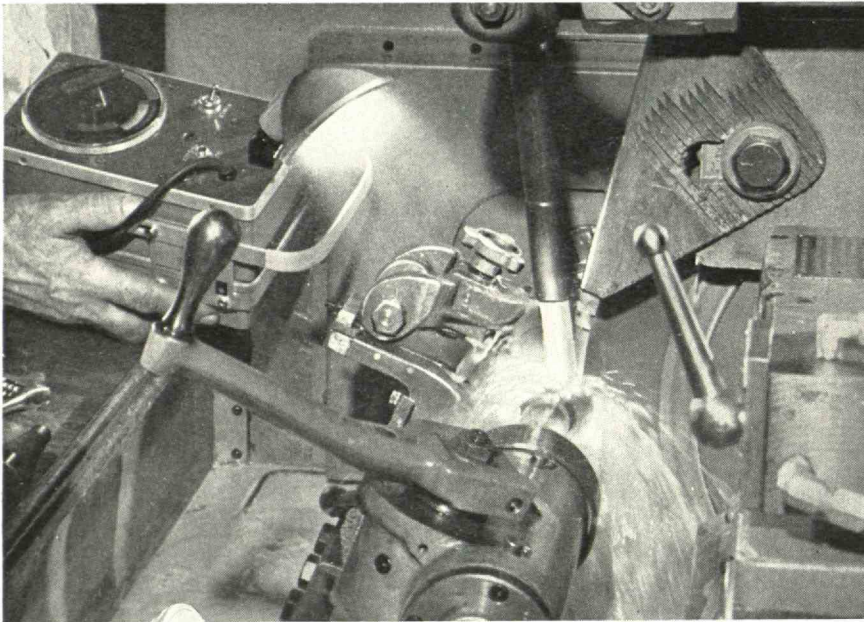
REJOIN COOP HERE

☐ I would like to rejoin the Coop and take advantage of the 10% (cash) or 8% (charge) discount. (Memberships terminate on June 30, regardless of joining date.)

☐ Annual membership fee of \$1.00 is enclosed. My Coop No. is _____. MIT Class of _____

Stop, Look, and Locate...

Locate troubles in rapidly moving machine parts with the Strobotac® electronic stroboscope. See, in apparent slow motion, details that are impossible to see with the unaided eye. Select any point in the cycle of the moving device, "slow" it down, or "stop" it entirely for critical evaluation. . . you can even photograph a malfunction as it actually occurs with conventional photographic equipment. And you can measure speed too, with 1% accuracy, without physical contact with the moving object.



U. S. Patent Number
2,966,257

Like to See What's Happening to Your Equipment?

Ask, on your company letterhead, for our Free Trial Offer. Briefly outline your problem, and we'll send you the STROBOTAC® electronic stroboscope and the appropriate accessory instruments to do your job. Use this equipment for 15 days, evaluate its merits in solving your own machinery problems, and then decide whether you want this versatile trouble shooting instrument for further work. If you decide not to keep it, return it, at no cost to you.

If you want it, send us your check.

Skeptical? Want to know more? Then write for complete information and a free copy of the Handbook of High-Speed Photography.

Type 1531-A **STROBOTAC®**
Electronic Stroboscope . . . \$290.

The basic instrument in a complete line of stroboscopic instrumentation

Write for our catalog.



*General Radio
manufactures
a complete line of
instruments for
science and industry*

- Admittance Meter
- Amplifiers
- Attenuators (Audio & Coaxial)
- Binding Posts
- Bridges
- Coaxial Connectors & Elements
- Coherent Decade Frequency Synthesizers
- Data Printer
- Decade Boxes & Voltage Dividers
- Dials & Knobs
- Digital Counters
- Digital-To-Analog Convertors
- Discriminator
- Distortion & Noise Meters
- Electrometer
- Electronic Voltmeters
- Filters
- Frequency Standards
- Frequency Meter & Discriminator
- Graphic Level Recorder
- Megohmmeters
- Motor Speed Controls
- Null Detectors
- Oscillators
- Output Power Meters
- Plugs & Jacks
- Potentiometers
- Power Supplies
- Pulse Generators
- Random-Noise Generator
- Slotted Lines
- Sound-Level Meters & Analyzers
- Standards, Resistance-Inductance-Capacitance
- Standard-Signal Generators
- Standard Sweep-Frequency Generator
- Stroboscopes
- Sweep Drives
- Time-Delay Generator
- Tone-Burst Generator
- Variac® Autotransformers
- Vibration Meter & Analyzer
- Voltage Regulators
- Wave Analyzer

GENERAL RADIO COMPANY WEST CONCORD, MASSACHUSETTS